



# **Dominion<sup>®</sup>**

**Application,  
Appendix, DEQ  
Supplement, Direct  
Testimony and  
Exhibits of  
Virginia Electric and  
Power Company**

**Before the State Corporation  
Commission of Virginia**

**Nansemond River Crossing Double  
Circuit 230 kV Lines #223 and #226  
Transmission Line Rebuild**

**Application No. 275**

**Case No. PUE-2016-00003**

**Filed: January 20, 2016**

**Volume 1 of 1**





**COMMONWEALTH OF VIRGINIA  
BEFORE THE  
STATE CORPORATION COMMISSION**

**APPLICATION OF  
VIRGINIA ELECTRIC AND POWER COMPANY  
FOR APPROVAL AND CERTIFICATION  
OF ELECTRIC FACILITIES**

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Lines #223 and #226 Transmission Line Rebuild**

**Application No. 275**

**Case No. PUE-2016-00003**

**Filed: January 20, 2015**

**COMMONWEALTH OF VIRGINIA  
BEFORE THE  
STATE CORPORATION COMMISSION**

<b>Application of</b>	)	
	)	
<b>Virginia Electric and Power Company</b>	)	<b>Case No. PUE-2016-00003</b>
	)	
<b>For approval and certification of electric</b>	)	
<b>transmission facilities under Va. Code</b>	)	
<b>§ 56-46.1 and the Utility Facilities Act,</b>	)	
<b>Va. Code § 56-265.1 <i>et seq.</i></b>	)	

**APPLICATION OF VIRGINIA ELECTRIC AND POWER COMPANY  
FOR APPROVAL AND CERTIFICATION OF ELECTRIC FACILITIES  
FOR NANSEMOND RIVER CROSSING DOUBLE CIRCUIT 230 KV  
LINES #223 AND #226 TRANSMISSION LINE REBUILD**

Virginia Electric and Power Company (“Dominion Virginia Power” or the “Company”) respectfully shows as follows:

1. Dominion Virginia Power is a public service corporation organized under the laws of the Commonwealth of Virginia furnishing electric service to the public within its Virginia service territory. The Company also furnishes electric service to the public in portions of North Carolina. Dominion Virginia Power’s electric system, consisting of facilities for generation, transmission and distribution of electric energy, is interconnected with the electric systems of neighboring utilities, and is a part of the interconnected network of electric systems serving the continental United States. By reason of its operation in two states and its interconnections with other utilities, the Company is engaged in interstate commerce.

2. In order to perform its legal duty to furnish adequate and reliable electric service, Dominion Virginia Power must, from time to time, replace and construct new

transmission facilities in its system. The electric facilities proposed in this Application are necessary so that Dominion Virginia Power can maintain the structural integrity and reliability of its transmission system and reliable electric service to its customers in the area and perform needed maintenance on its existing facilities.

3. Accordingly, the Company proposes to rebuild, entirely within existing right-of-way, 1.3 miles of existing double circuit 230 kV transmission lines, Surry-Yadkin Line #223 and Churchland-Surry Line #226, located between Harbour View Substation and Smithfield Substation in Suffolk, Virginia (the “Rebuild Project”).

4. There is an immediate and current need for the Rebuild Project to assure that Dominion Virginia Power can continue to provide reliable electric transmission service consistent with the Company’s obligation under Virginia law to serve retail electric customers in its exclusive service territory. Presuming Commission authorization by June 2016 and the ability to obtain outages, the Company anticipates that the Rebuild Project could be in service by early 2017. The necessity for the proposed Rebuild Project is described in more detail in Section I of the Appendix attached to this Application.

5. For the Rebuild Project, the Company proposes to replace five existing 230 kV double circuit suspension-type lattice towers located in the Nansemond River that support Line #223 and #226. The existing structures are galvanized steel and were originally constructed in the late 1960s. The five replacement structures will be located approximately 60 feet south of the existing structures, centerline to centerline. One 230 kV double circuit, weathering steel, double deadend type tower on each bank of the Nansemond River will also be removed and replaced with a galvanized steel, double deadend type monopole. The monopole structure will be located approximately 60 feet south of the existing structures on

each riverbank, resulting in a total replacement of seven existing structures with seven new structures. In addition to the structure replacement, the Company also proposes to replace 1.3 miles of the existing three-phased 721 (18/19) ACAR twin-bundled conductors of Line #223 and #226 with 1.3 miles of three-phased 768 ACSS/TW/HS-285 (20/7) twin-bundled conductors. One span of existing three-phased 721 (18/19) ACAR twin-bundled conductors will be transferred to each proposed riverbank structure. The transferred conductor will be mechanically spliced to the proposed conductor to energize the two 230 kV lines. The approximate size of the structures, the materials to be used to construct the Rebuild Project, and the right-of-way clearing methods, corridor usage and maintenance procedures are described in Section II of the Appendix. The proposed facilities will meet or exceed the standards of the National Electrical Safety Code in effect at the time of construction.

6. As noted above, the Company anticipates that the Rebuild Project could be in service by early 2017 subject to Commission approval and outage scheduling. The estimated total cost of the proposed Rebuild Project, which assumes completion by early 2017, is approximately \$19.2 million (2015 dollars). There is no station work associated with the Rebuild Project.

7. The proposed facilities will afford the best means of meeting the continuing need for reliable service while reasonably minimizing adverse impact on the scenic, environmental and historic assets of the area. Because the existing right-of-way is adequate to construct the proposed Rebuild Project, no new right-of-way is necessary. Given the availability of existing right-of-way and the statutory preference given to the use of existing rights-of-way, and because additional costs and environmental impacts would be associated

with the acquisition and construction of new right-of-way, the Company did not consider any alternate routes for this Rebuild Project.

8. Based on consultations with the Virginia Department of Environmental Quality (“DEQ”), the Company has developed a supplement (“DEQ Supplement”) containing information designed to facilitate review and analysis of the proposed facilities by the DEQ and other relevant agencies. The DEQ Supplement is attached to this Application.

9. Dominion Virginia Power’s experience, the advice of consultants and a review of published studies by experts in the field have disclosed no causal link to harmful health or safety effects from electric and magnetic fields generated by the Company’s existing or proposed facilities. For further discussion of this topic, *see* Section IV of the Appendix.

10. A list of federal, state and local agencies and officials that reasonably may be expected to have an interest in the proposed construction, and to which a copy of the Application will be sent, is set forth in Section V of the Appendix.


11. In addition to the information provided in the Appendix and the DEQ Supplement, this Application is supported by the prepared direct testimony of Company witnesses Kyle D. Hannah; Elizabeth Kricorian; and Nadiah F. Younus filed with this Application.

[INTENTIONALLY LEFT BLANK]

WHEREFORE, Dominion Virginia Power respectfully requests that the Commission:

- (a) direct that notice of this Application be given as required by § 56-46.1 of the Code of Virginia;
- (b) approve pursuant to § 56-46.1 of the Code of Virginia the construction of the proposed 230 kV transmission facilities; and
- (c) grant a certificate of public convenience and necessity for the facilities under the Utility Facilities Act.

**VIRGINIA ELECTRIC AND POWER COMPANY**

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January 20, 2016



COMMONWEALTH OF VIRGINIA  
BEFORE THE  
STATE CORPORATION COMMISSION

APPLICATION OF  
VIRGINIA ELECTRIC AND POWER COMPANY  
FOR APPROVAL AND CERTIFICATION  
OF ELECTRIC FACILITIES

Nansemond River Crossing Double Circuit 230 kV  
Lines #223 and #226 Transmission Line Rebuild

Application No. 275

## Appendix

Containing Information in Response to  
“Guidelines of Minimum Requirements for Transmission Line Application”

Case No. PUE-2016-00003

Filed: January 20, 2016



## TABLE OF CONTENTS

I.	Necessity for the Proposed Project .....	1
II.	Description of the Proposed Project .....	37
III.	Impact of Line on Scenic, Environmental and Historic Features .....	66
IV.	Health Aspects of EMF .....	84
V.	Notice .....	93

## **I. NECESSITY FOR THE PROPOSED PROJECT**

- A. Detail the engineering justifications for the proposed project (for example, provide narrative to support why the project is necessary to upgrade or replace an existing facility, to significantly increase system reliability, to connect a new generating station to the Company's system, etc.). Detail the later plans for the proposed project, if appropriate.**

**Response:** In order to maintain the structural integrity and reliability of its transmission system and perform needed maintenance on its existing facilities, Virginia Electric and Power Company ("Dominion Virginia Power" or the "Company") proposes to rebuild, entirely within existing right-of-way, approximately 1.3 miles of existing double circuit 230 kV transmission lines, Surry-Yadkin Line #223 and Churchland-Surry Line #226, located between Harbour View Substation and Smithfield Substation in Suffolk, Virginia (the "Rebuild Project"). Attachment I.E.1 contains a map of the Company's existing transmission system in this area, including the Company's existing Line #223 and #226.

For the Rebuild Project, the Company proposes to replace five existing 230 kV double circuit suspension-type lattice towers located in the Nansemond River that support Line #223 and #226. The existing structures are galvanized steel and were originally constructed in the late 1960s. The five replacement structures will be located approximately 60 feet south of the existing structures, centerline to centerline. One 230 kV double circuit, weathering steel, double deadend type tower on each bank of the Nansemond River will also be removed and replaced with a galvanized steel, double deadend type monopole. The monopole structure will be located approximately 60 feet south of the existing structures on each riverbank, resulting in a total replacement of seven existing structures with seven new structures. In addition to the structure replacement, the Company also proposes to replace 1.3 miles of the existing three-phased 721 (18/19) ACAR twin-bundled conductors of Line #223 and #226 with 1.3 miles of three-phased 768 ACSS/TW/HS-285 (20/7) twin-bundled conductors. One span of existing three-phased 721 (18/19) ACAR twin-bundled conductors will be transferred to each proposed riverbank structure. The transferred conductor will be mechanically spliced to the proposed conductor to energize the two 230 kV lines. For detailed descriptions of the existing and rebuilt facilities, see Section II.A.3.

In coordination with the Rebuild Project, the Company will also replace the existing shield wire. The existing 3#6 shield wire located above Line #223 between the existing weathering steel double deadend towers on each riverbank will be replaced with 7#7 shield wire. The 7#7 shield wire will be mechanically spliced with the existing 3#6 shield wire transferred to each proposed riverbank structure. The existing fiber optic shield wire located above Line #226 will be replaced between the existing splice points located

on the existing weathering steel double deadend tower located on the east bank of the Nansemond River (which will ultimately be transferred to the new east bank monopole structure) and the existing weathering steel double deadend tower located approximately 0.6 mile west of the west bank of the Nansemond River at Crittenden Road.

There is no station work associated with the Rebuild Project.

There is an immediate and current need for the Rebuild Project. Presuming Commission authorization by June 2016 and the ability to obtain outages, the Company anticipates that the Rebuild Project could be in service by early 2017. The estimated total cost of the proposed Rebuild Project, which assumes completion by early 2017, is \$19.2 million (2015 dollars).

The Rebuild Project is necessary to assure that Dominion Virginia Power can continue to provide reliable electric service consistent with the Company's obligation under Virginia law to serve retail electric customers in its exclusive service territory. The Surry-Yadkin Line #223 and Churchland-Surry Line #226 provide service to the Company's transmission system in the eastern region of Virginia, and are important components of the Company's electric transmission grid for providing reliable electric transmission service to its territory in Virginia and North Carolina. The failure to address the critical structural deficiencies associated with the five river crossing towers will limit the Company's ability to maintain reliable transmission service to its customers.

The Rebuild Project will meet an immediate operational need by replacing aging transmission facilities. Specifically, the Rebuild Project provides the benefit of removing or replacing aging transmission facilities that are reaching the end of their service lives. The foundations of the five towers in the river have critical structural deficiencies that cannot be repaired. Further, all seven of the 230 kV towers and hardware are approaching 50 years old. As a natural course of advanced aging, the towers exhibit almost complete loss of galvanizing and are beginning to rust; pitting can be seen in some areas of the five river crossing towers, which indicates that the steel is losing thickness thereby weakening the structure; and the associated hardware is severely corroded and insulators are flashed. As shown in Attachment I.A.1, there is significant corrosion evident on the structures and hardware.

Attachment I.A.2 is an inspection report from Crofton Industries, based on inspections performed in 2014, illustrating the extensive deterioration of the steel and concrete foundations. The steel H-piles exhibit severe section loss, including holes in some flanges and thickness loss approaching 50%. The strength of these steel H-piles is structurally compromised. The concrete pile caps of these foundations also exhibit significant deterioration, including severe horizontal and vertical cracking at the bottom portion of the concrete

cap with evidence of rust staining. Rust staining indicates that the steel reinforcing inside the concrete is exposed to water and actively corroding. In some cases, concrete spalling has occurred well above the cap bottom, and exposed the flange surface of the steel H-piles and the steel reinforcement. This deterioration of the bottoms of the concrete caps allows brackish water infiltration into the concrete, promoting further internal corrosion of the H-piles and steel reinforcement.

The concrete and steel deterioration in the bottom section of the pile cap constitutes an identified threat to the integrity of the foundation system because this is the zone of load transfer between steel H-pile and concrete cap. The Company has determined that there is no way to safely rehabilitate these structures; therefore, replacement is the only option.

Dominion Virginia Power is part of the Eastern Interconnection transmission grid, meaning it is interconnected, directly or indirectly, with all of the other transmission systems in the U.S. and Canada between the Rocky Mountains and the Atlantic coast, except Quebec and most of Texas. All of the transmission systems in the Eastern Interconnection are dependent on each other for support in moving bulk power through the transmission system and for reliability support. Dominion Virginia Power's service to its customers is extremely reliant on a robust and reliable regional transmission system.

Dominion Virginia Power also is part of the PJM Interconnection L.L.C. ("PJM") regional transmission organization (RTO) providing service to a large portion of the eastern United States. PJM is currently responsible for ensuring the reliability and coordinating the movement of electricity through all or parts of Delaware, Illinois, Indiana, Kentucky, Maryland, Michigan, New Jersey, North Carolina, Ohio, Pennsylvania, Tennessee, Virginia, West Virginia and the District of Columbia. This service area has a population of about 60 million and on July 21, 2011, set a record high of 158,450 MW for summer peak demand, of which Dominion Virginia Power's load portion was approximately 19,636 MW serving 2.4 million customers. On July 22, 2011, the Company set a record high of 20,061 MW for summer peak demand. On February 20, 2015, the Company set a winter and all-time record demand of 21,651 MW. Moreover, based on the 2016 PJM Load Forecast, the Dominion Zone is expected to be one of the fastest growing zones in PJM with an average summer peak load growth rate of 1.2% over the next 10 years compared to the PJM average of 0.6% over the same period. The projected average winter peak load growth rate of Dominion zone is 1.6% over the next 10 years compared to the PJM average of 0.8% over the same period.

Dominion Virginia Power's transmission system is responsible for providing transmission service to the Company's retail customers and also to Appalachian Power Company (APCo), Old Dominion Electric Cooperative (ODEC), Northern Virginia Electric Cooperative (NOVEC), Central

Virginia Electric Cooperative (CVEC), and Virginia Municipal Electric Association (VMEA) for redelivery to their retail customers in Virginia, as well as to North Carolina Electric Membership Corporation (NCEMC) and North Carolina Eastern Municipal Power Agency (NCEMPA) for redelivery to their customers in North Carolina. The Company needs to be able to maintain the overall, long-term reliability of its transmission system, as its customers require more power in the future.

The proposed Rebuild Project will replace aging infrastructure at the end of its service life, thereby enabling the Company to maintain the overall long-term reliability of its transmission system.

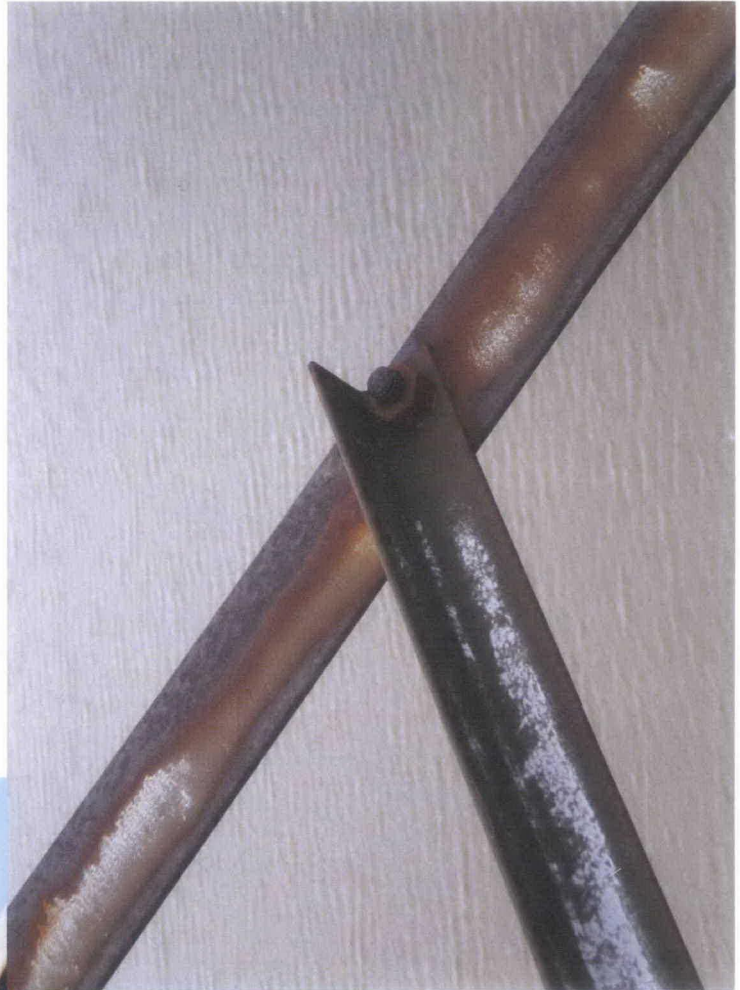
## Condition of the 47 year old galvanized towers:



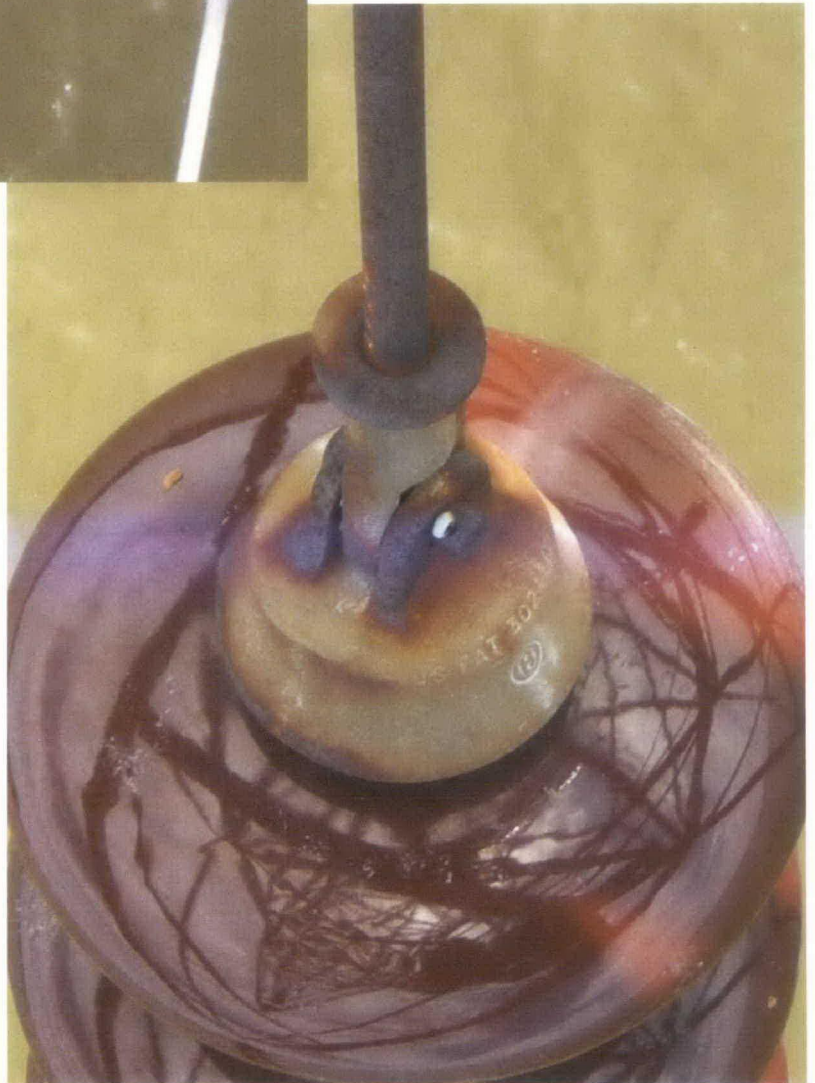
Loss of galvanizing-corrosion evident on steel members and hardware



## Severe loss of galvanizing



## Worn & Corroded hardware

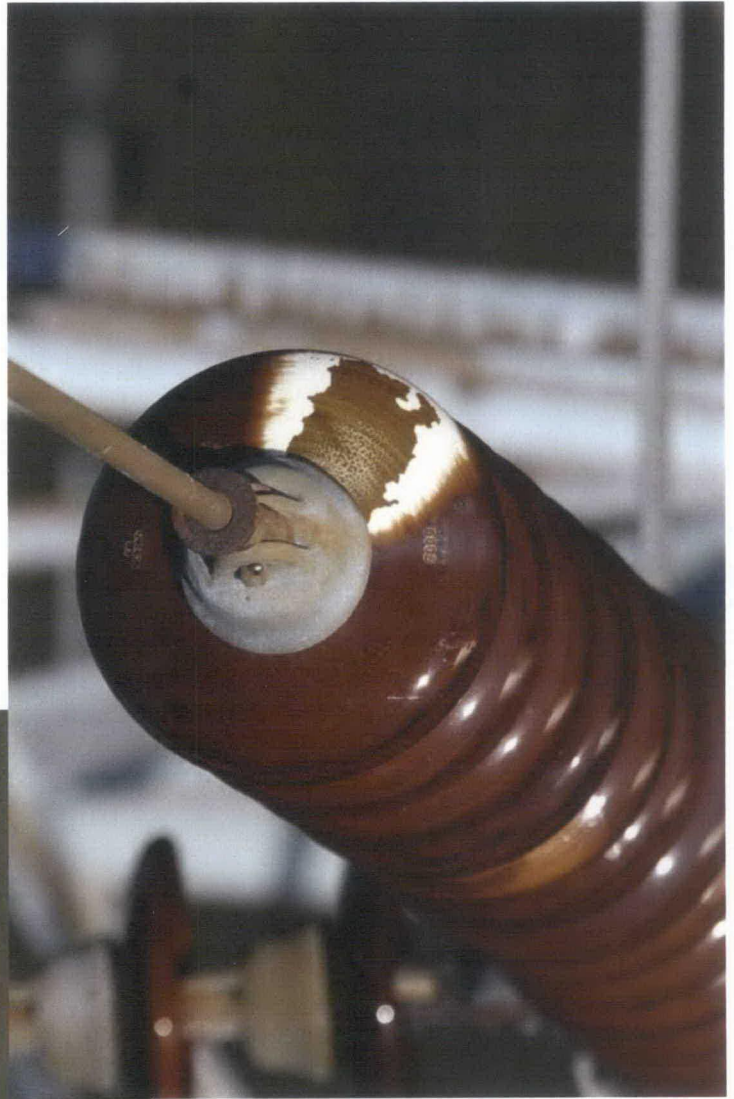
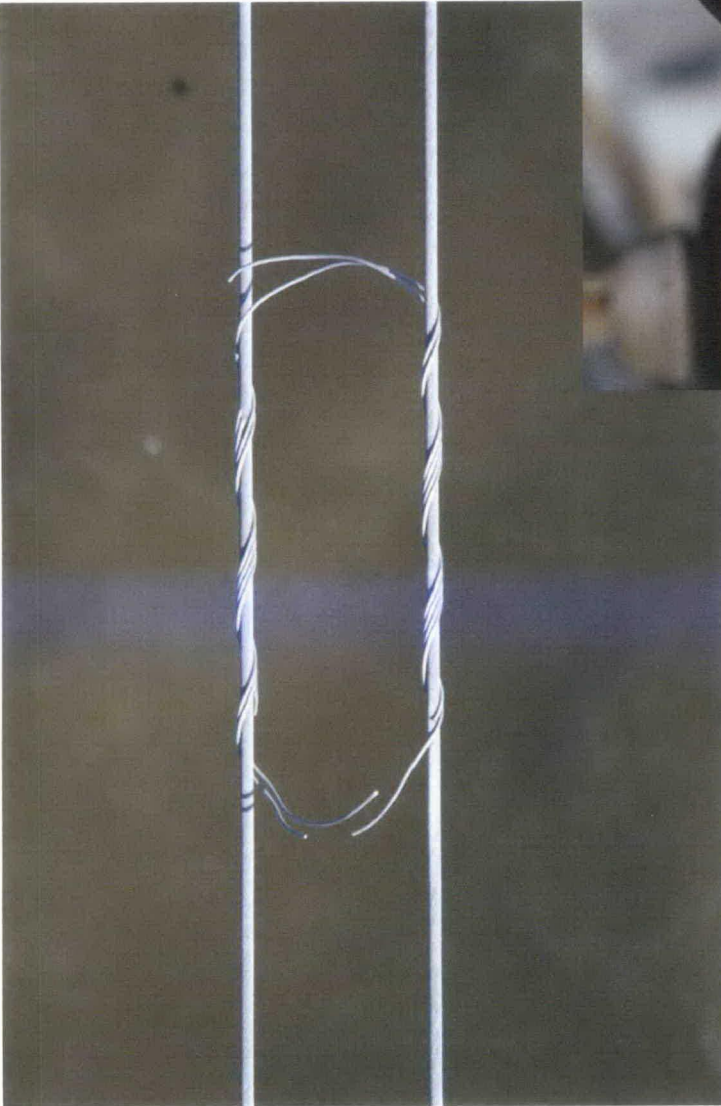




## Severe corrosion on fasteners



Broken Spacer



Flashed insulator



Excessive wear & corrosion  
on hardware-pitting evident  
on Y clevis





## **STEEL H-PILE AND CAP INSPECTION**

**T/L No. 223 Strs. No. 183-187**

**SURRY-CHUCKATUCK -**

**CHURCHLAND T/L 223**

## **NANSEMOND RIVER CROSSING**

### **RE-INSPECTION FINDINGS**

#### **Introduction**

Due to the extensive deterioration and damage noted during the initial 2014 investigations of structures 183-187 crossing the Nansemond River, our crew was tasked to perform a more extensive cleaning and steel evaluation on select piles on each structure.

#### **Overall Summary**

The towers within this line that required reinvestigation cross the Nansemond River. Those towers show rather extensive damage and deterioration to the concrete caps with exposed reinforcing steel. Additionally, the steel piles supporting the foundations of towers 183 through 187 exhibit section loss and heavy rust scale.

After further rust scale removal using pneumatic needle guns and ultrasonic testing, 1" and 2 " holes were found on several piles below the concrete caps. The flanges on these piles did not exhibit any knife edging but have been reduced to at least 1/8" thick due to corrosion.

#### **Recommendations**

Our recommendation is to schedule these structure foundations for near immediate rehabilitation.

**STEEL H-PILE INSPECTION**  
NANSEMOND RIVER

DATE INSPECTED  
11-03-2014

TOWER NO.  
223/183

**FOUNDATION  
& PILE NO.**

**RECORDED MEASUREMENTS**

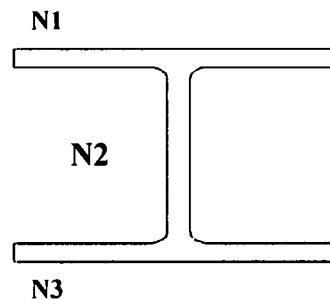
	NDT MEASUREMENT			DISTANCE FROM CAP		
	N1	N2	N3	N1	N2	N3
1A						
1B						
1C						
1D						
2A	0.355	0.345	0.440	3"	3"	3"
2B						
2C						
2D						
3A						
3B						
3C						
3D						
4A						
4B	0.345	0.410	0.420	3"	3"	8"
4C						
4D						

**COMMENTS:**

THIS IS THE FIRST TOWER RE INSPECTED IN THIS LINE. NDT READINGS WERE TAKEN JUST BELOW THE CONCRETE CAP AS WELL AS  
BELOW THE MUD LINE TO VERIFY THE MOST LIKELY AREAS OF SEVEREST CORROSION.  
JUST BELOW THE CONCRETE CAP HAD MUCH MORE CORROSION.

PILE 2A 4" BELOW MUDLINE N1 0.620, N2 0.620, N3 0.585

PILE 4B 4" BELOW MUDLINE N1 0.605, N2 0.580, N3 0.585

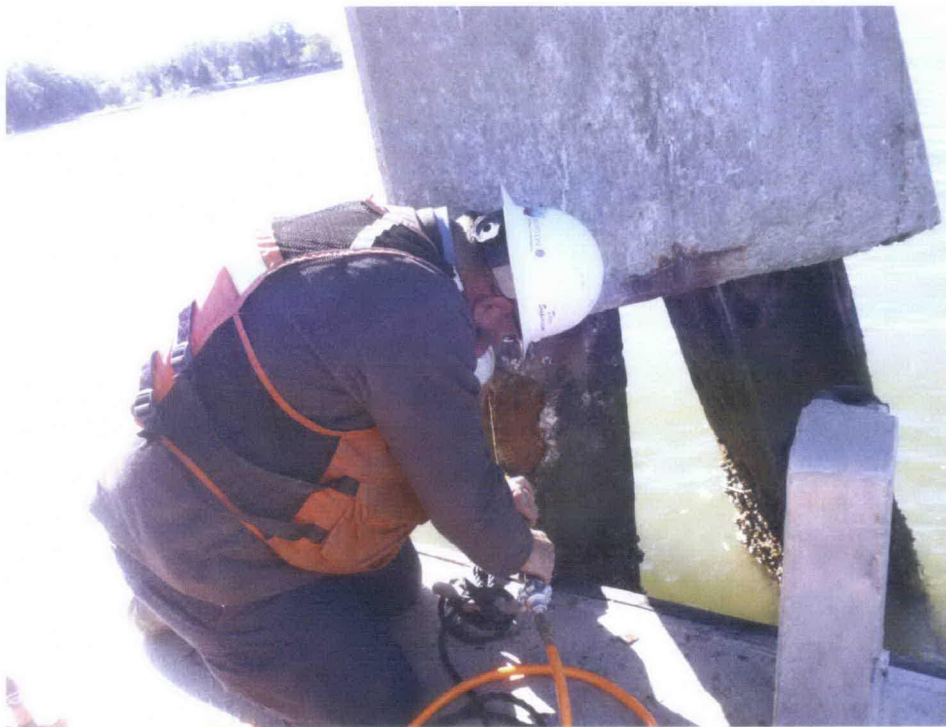


**STRUCTURE INVESTIGATION PHOTOGRAPHIC LOG**  
**T/L No. 223 Structure No. 183**  
**Foundation 2 Pile A-Supplemental Investigation**





**STRUCTURE INVESTIGATION PHOTOGRAPHIC LOG**  
**T/L No. 223 Structure No. 183**  
**Foundation 2 Pile A-Supplemental Investigation**



**STRUCTURE INVESTIGATION PHOTOGRAPHIC LOG**  
**T/L No. 223 Structure No. 183**  
**Foundation 2 Pile A-Supplemental Investigation**





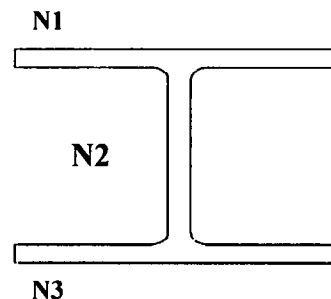
**STEEL H-PILE INSPECTION**  
NANSEMOND RIVER

DATE INSPECTED  
11-04-2014

TOWER NO. 223/184	FOUNDATION & PILE NO.	RECORDED MEASUREMENTS					
		NDT MEASUREMENT			DISTANCE FROM CAP		
		N1	N2	N3	N1	N2	N3
	1A						
	1B						
	1C						
	1D						
	2A	0.445	0.350	0.420	3"	3"	3"
	2B						
	2C						
	2D						
	3A						
	3B	0.355	0.325	0.415	4"	3"	3"
	3C						
	3D						
	4A						
	4B						
	4C						
	4D						

COMMENTS:

PILE 3B HAS 2 HOLES ON N3 SIDE. HOLES ARE INSET 1" FROM THE EDGE OF THE FLANGE AND THE TOP HOLE IS 8" BELOW THE CAP.  
FLANGE EDGE IS STILL 1/8" WIDE AT THE THINNEST PART, 9" BELOW THE CAP.  
TOP HOLE IS 8" BELOW CAP. 1"W x 2"H. THEN A SECOND SMALLER HOLE 1" BELOW THAT HOLE, 1/4"W x 1/2"H.



**STRUCTURE INVESTIGATION PHOTOGRAPHIC LOG**  
**T/L No. 223 Structure No. 184**  
**Foundation 3 Pile B-Supplemental Investigation**



**STRUCTURE INVESTIGATION PHOTOGRAPHIC LOG**  
**T/L No. 223 Structure No. 184**  
**Foundation 3 Pile B-Supplemental Investigation**



**STEEL H-PILE INSPECTION**  
NANSEMOND RIVER

DATE INSPECTED  
11-04-2014

TOWER NO.  
223/185

**FOUNDATION  
& PILE NO.**

**RECORDED MEASUREMENTS**

**NDT MEASUREMENT**

**DISTANCE FROM CAP**

	N1	N2	N3	N1	N2	N3
1A						
1B						
1C						
1D						
2A	0.315	0.365	0.325	5"	5"	5"
2B						
2C						
2D						
3A						
3B						
3C						
3D						
4A	0.370	0.420	0.410	6"	10"	6"
4B						
4C						
4D						

COMMENTS:

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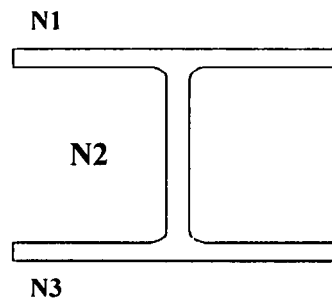
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**STEEL H-PILE INSPECTION**  
**NANSEMOND RIVER**

**DATE INSPECTED**  
**11-04-2014**

**TOWER NO.**  
**223/186**

**FOUNDATION**  
**& PILE NO.**

**RECORDED MEASUREMENTS**

**NDT MEASUREMENT**

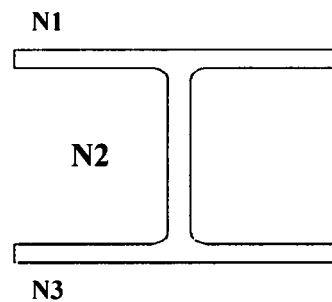
**DISTANCE FROM CAP**

	N1	N2	N3	N1	N2	N3
1A	0.365	0.305	0.325	5"	5"	7"
1B						
1C						
1D						
2A	0.320	0.310	0.305	6"	6"	6"
2B						
2C						
2D						
3A						
3B						
3C						
3D						
4A						
4B						
4C						
4D						

**COMMENTS:**

PILE 1A HAS 2 HOLES, 1 INSIDE EACH FLANGE. HOLE ON N1 SIDE IS INSET 3" FROM THE EDGE OF THE FLANGE AND 3" BELOW THE CONCRETE CAP. 2"W x 1"H. HOLE ON N3 SIDE IS INSET 1.5" FROM THE EDGE OF THE FLANGE AND 3.5" BELOW THE CONCRETE CAP. 1.25"W x 1"H. THE EDGES OF BOTH FLANGES ARE STILL 3/16" WIDE.

PILE 2A HAS 1 HOLE ON N3 SIDE. HOLE IS INSET 1.25" FROM THE EDGE OF THE FLANGE AND 4.5" BELOW THE CONCRETE CAP. .5"W x .25"H. THE EDGE OF THE FLANGE IS STILL 3/16" WIDE.





**STRUCTURE INVESTIGATION PHOTOGRAPHIC LOG**  
**T/L No. 223 Structure No. 186**  
**Foundation 1 Pile A-Supplemental Investigation**



**STRUCTURE INVESTIGATION PHOTOGRAPHIC LOG**  
**T/L No. 223 Structure No. 186**  
**Foundation 1 Pile A-Supplemental Investigation**





**STRUCTURE INVESTIGATION PHOTOGRAPHIC LOG**  
**T/L No. 223 Structure No. 186**  
**Foundation 2 Pile A-Supplemental Investigation**





**STEEL H-PILE INSPECTION**  
NANSEMOND RIVER

DATE INSPECTED  
11-04-2014

TOWER NO.  
223/187

**FOUNDATION  
& PILE NO.**

**RECORDED MEASUREMENTS**

**NDT MEASUREMENT**

**DISTANCE FROM CAP**

N1 N2 N3 N1 N2 N3

1A						
1B						
1C						
1D						
2A						
2B						
2C	0.205	0.220	0.355	3"	3"	3"
2D						
3A						
3B						
3C	0.325	0.370	0.410	3"	3"	3"
3D						
4A						
4B						
4C						
4D						

COMMENTS:

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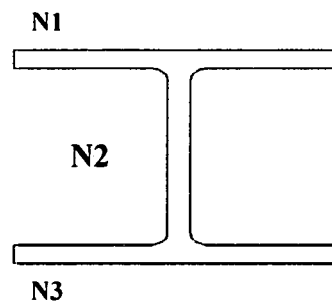
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**STRUCTURE INVESTIGATION PHOTOGRAPHIC LOG**  
**T/L No. 223 Structure No. 187**  
**Foundation 2 Pile C-Supplemental Investigation**



## **I. NECESSITY FOR THE PROPOSED PROJECT**

- B. Describe the present system and detail how the proposed project will effectively satisfy present and future demand requirements. Provide pertinent load growth data (at least five years of historical and ten years of projected loads where applicable). Provide all assumptions inherent within the projected data and why existing right-of-way cannot adequately serve the needs of the Company if that is the case. Indicate when the existing system is projected to be inadequate. If the existing system is, or will at some future time be inadequate in a contingency situation, describe this critical contingency. Detail what might cause such situation. Where appropriate, provide historical incidence of similar situations which would be avoided by the proposed construction.**

Response: Attachment I.E.1 shows the portion of the Company's transmission system in the area of the proposed Rebuild Project. Existing Surry-Yadkin Line #223 and Churchland-Surry Line #226 are part of the Company's 230 kV network. Line #223 and Line #226 interconnect at Surry Substation with the Company's 1,676 MW Surry Power Station generation facility and multiple 500 kV lines and 230 kV lines. Lines #223 and #226 are two of three primary 230 kV sources to deliver power reliably to the Virginia Beach and Suffolk area. These two lines provide direct delivery to the customers served out of Smithfield, Harbour View and Crittenden Substations. These substations serve over 23,000 customers, including approximately 2,200 Community Electric Cooperative customers.

The table in Attachment I.B.1 provides historical summer peak loads of the Virginia Beach and Suffolk area over the period 2005 to 2014, and also provides the anticipated summer peak loads from 2015 to 2024. The projected loads in Attachment I.B.2 represent the Company's forecasted summer peaks based on actual loads and the PJM 2015 Load Forecast and demonstrate the continued growth that is expected to occur. Over the period from 2015 to 2024, peak electrical demand of the Virginia Beach and Suffolk area is projected to grow from 3,045 MW to 3,223 MW, an increase of 5.8%. Notwithstanding, the Rebuild Project is responsive to the physical condition of the existing facilities, not the regional load and forecasts. The Company cannot identify a transmission planning need to increase the capacity or voltage of the existing facilities.

As discussed previously, the foundations of the five towers in the river have critical structural deficiencies that cannot be safely rehabilitated. It is necessary for the Company to rebuild this river crossing section of Line #223 and Line #226 to assure that Dominion Virginia Power can continue to provide reliable electric service to customers consistent with the Company's obligation under Virginia law.

## Virginia Beach and Suffolk Area Load Data

### Summer Peak Load History

Year	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Load (MW)	3,104	3,167	3,179	3,002	2,897	3,027	3,138	2,891	2,855	2,885

## Virginia Beach and Suffolk Area Load Data

### Summer Peak Load Forecast

Year	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Load (MW)	3,045	3,078	3,108	3,131	3,146	3,171	3,179	3,194	3,209	3,223

## **I. NECESSITY FOR THE PROPOSED PROJECT**

- C. Describe the feasible alternatives, if any, for meeting the identified need without constructing the proposed project. Explain why these alternatives were rejected.**

Response: Existing 230 kV Surry-Yadkin Line #223 and Churchland-Surry Line #226 play an important role in the reliable operation of the Company's electric transmission system. As detailed in Section I.A, the Company has recognized that the river crossing section of Line #223 and Line #226 is approaching the end of its service life. Because the existing corridor is adequate to construct the proposed Rebuild Project, no permanent new real estate rights are needed; therefore, any alternative to this Rebuild Project requiring the addition of new 230 kV facilities in new rights-of-way at significant expense was not considered.

An alternative to the Rebuild Project that the Company considered and rejected was to rebuild this river crossing section of Line #223 and Line #226 with underground lines ("underground alternative"). The underground alternative is estimated to cost \$189 million, which is approximately \$170 million more than the proposed Rebuild Project. In addition, the projected construction time of the proposed Rebuild Project is estimated to be approximately nine months (with an additional three months for removal of existing lattice structures and foundations in the river), and the projected construction time of the underground alternative is estimated to be 18-26 months. Additionally, the underground alternative would require the construction of a transition station on each side of the river where the line transitions from underground to overhead. The Company would have to purchase the property (approximately 1.0 to 1.5 acres), and also allow additional time for issues associated with siting, construction and permitting of the station. Due to the significantly greater costs, environmental impacts, and added construction time, particularly given the immediate need to replace the existing structures, this alternative was rejected.

**I. NECESSITY FOR THE PROPOSED PROJECT**

**D. Describe any lines or facilities which will be removed, replaced, or taken out of service upon completion of the proposed project.**

Response: Five existing 230 kV double circuit galvanized steel lattice suspension type towers located in the Nansemond River and one existing 230 kV double circuit weathering steel lattice double deadend type tower located on each bank of the Nansemond River supporting existing Lines #223 and #226 will be removed and replaced structure-for-structure. Five new 230 kV double circuit galvanized steel suspension-type lattice towers are proposed to be located in the Nansemond River approximately 60 feet south of the existing in-river structures, centerline to centerline. One new 230 kV double circuit galvanized steel, double deadend type monopole structure will be located on each Nansemond River bank approximately 60 feet south of the existing upland weathering steel lattice double deadend type towers.

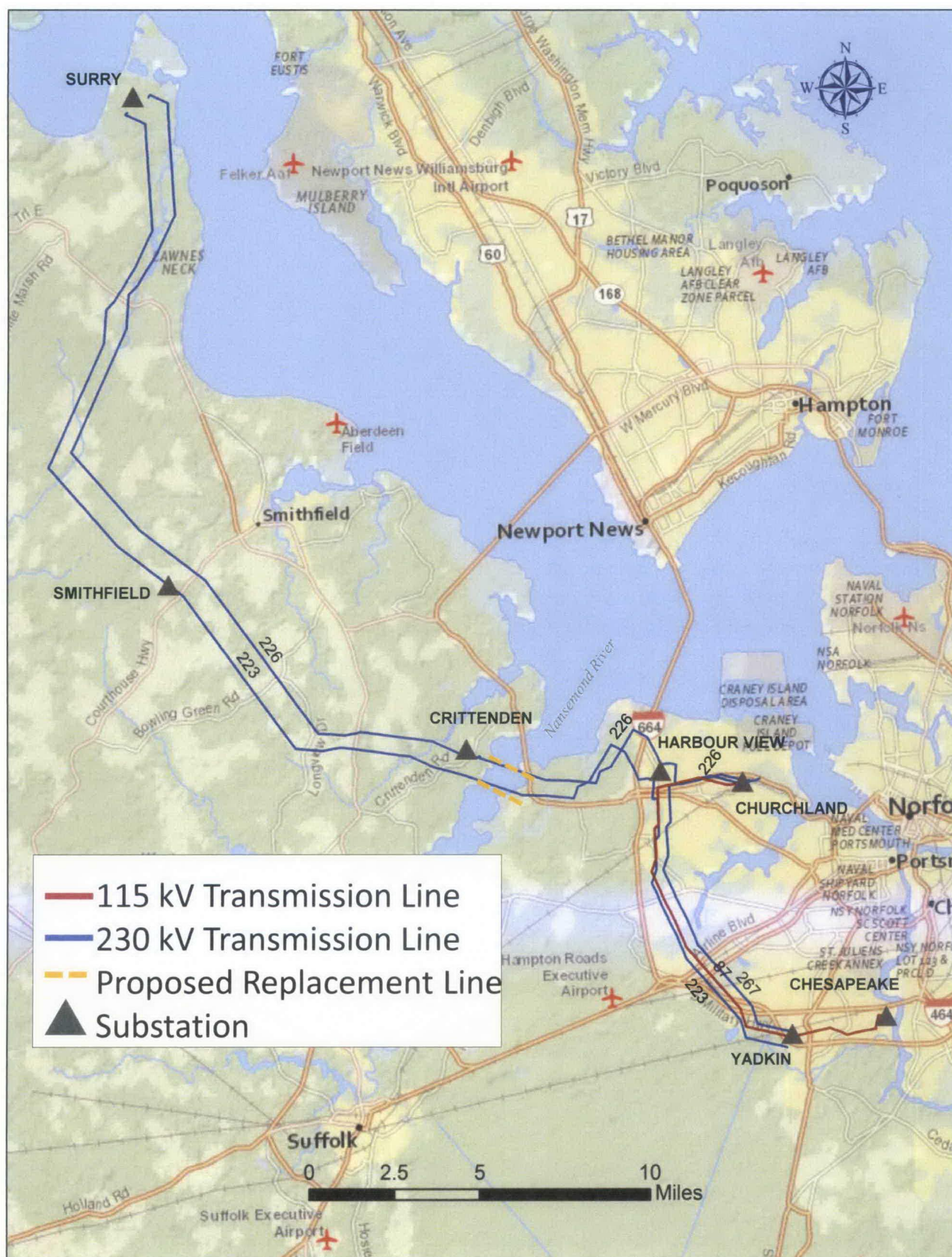
In addition to the structure replacement, approximately 1.3 miles of existing three-phased 721 (18/19) ACAR twin-bundled conductors will be removed between the two existing riverbank towers. Approximately 1.3 miles of three-phased 768 ACSS/TW/HS-285 (20/7) twin-bundled conductors will be installed between the two new riverbank monopole structures. For detailed descriptions of the existing and rebuilt facilities, see Section II.A.3.

**I. NECESSITY FOR THE PROPOSED PROJECT**

- E. Provide a system map of suitable scale showing the location and voltage of the Company's transmission lines, substations, generating facilities, etc., which would affect or be affected by the new transmission line and are relevant to the necessity for the proposed line. Clearly, label on this map all points referenced in the necessity statement.**

Response: See Attachment I.E.1.





**I. NECESSITY FOR THE PROPOSED PROJECT**

**F. Provide the desired in-service date of the proposed project and the estimated construction time.**

Response: There is an immediate need for the Rebuild Project. If the Company can obtain Commission authorization by June 2016 and schedule the necessary outages, then the Company anticipates that the Rebuild Project could be in service by early 2017.

The estimated construction time for this Rebuild Project is 12 months, including three months for removal of the existing lattice structures and the existing foundations in the Nansemond River. A period of five months will be needed for engineering, material procurement and construction permitting.

**I. NECESSITY FOR THE PROPOSED PROJECT**

**G. Provide the estimated cost of the project.**

Response: The estimated total cost for the Rebuild Project, which assumes completion by early 2017, is approximately \$19.2 million.<sup>1</sup> All costs are in 2015 dollars. There is no station work associated with the Rebuild Project.

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<sup>1</sup> This total estimated cost does not include costs associated with relocating an existing underground distribution line located on the southernmost edge of the existing corridor, if needed to facilitate installation of the Rebuild Project. The estimated cost associated with relocating the existing underground distribution line is approximately \$1.5 million.

**I. NECESSITY FOR THE PROPOSED PROJECT**

**H. In addition to all other information required by these guidelines, applications for approval to construct facilities and transmission lines inter-connecting a Non Utility Generator (NUG) and a utility shall include the following information.**

- 1. The full name of the NUG as it appears in its contract with the utility and the dates of the initial contract and any amendments;**
- 2. A description of the arrangements for financing the facilities, including information on the allocation of costs between the utility and the NUG:**
- 3. a. For Qualifying Facilities (QFs) certificated by Federal Energy Regulatory Commission (FERC) order, provide the QF or docket number, the dates of all certification or recertification orders, and the citation to FERC Reports, if available;**  
**b. For self-certificated QFs, provide a copy of the notice filed with the FERC;**
- 4. In addition to the information required in 3a or 3b, provide the project number and project name used by the FERC in licensing hydroelectric projects, also provide the dates of all orders and citations to FERC Reports, if available; and**
- 5. If the name provided in 1 above differs from the name provided in 3 above, give a full explanation.**

**Response:** Not applicable.



## **I. NECESSITY FOR THE PROPOSED PROJECT**

### **I. Describe the new and existing generating sources, distribution circuits or load centers planned to be served by all new substations, switching stations and other ground facilities associated with the proposed project.**

Response: There are no new or existing generating facilities associated with the Rebuild Project, and no new substations, switching stations or distribution facilities associated with the Rebuild Project.

The existing underground distribution line located on the southernmost side of the existing right-of-way may need to be relocated within the existing right-of-way to facilitate the installation of the proposed Rebuild Project. The cost for this relocation is not included in the estimate provided for the Rebuild Project.<sup>2</sup>

For a description of load centers to be served, see Sections I.A and I.B.

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<sup>2</sup> See note 1 *supra*.

## **II. DESCRIPTION OF THE PROPOSED PROJECT**

### **A. Right-of-way (ROW)**

- 1. Provide the length of the proposed corridor and viable alternatives.**

Response: The length of the existing right-of-way to be used for the Rebuild Project is approximately 1.3 miles. An additional 0.7 mile from the eastern side of Crittenden Road (SR 628) to the western riverbank and from the eastern side of Bridge Road (US 17) to the eastern riverbank in Suffolk, Virginia will also be used to facilitate the construction activities associated with the Rebuild Project and will be affected by the replacement of the fiber optic shield wire described in Section I.A.

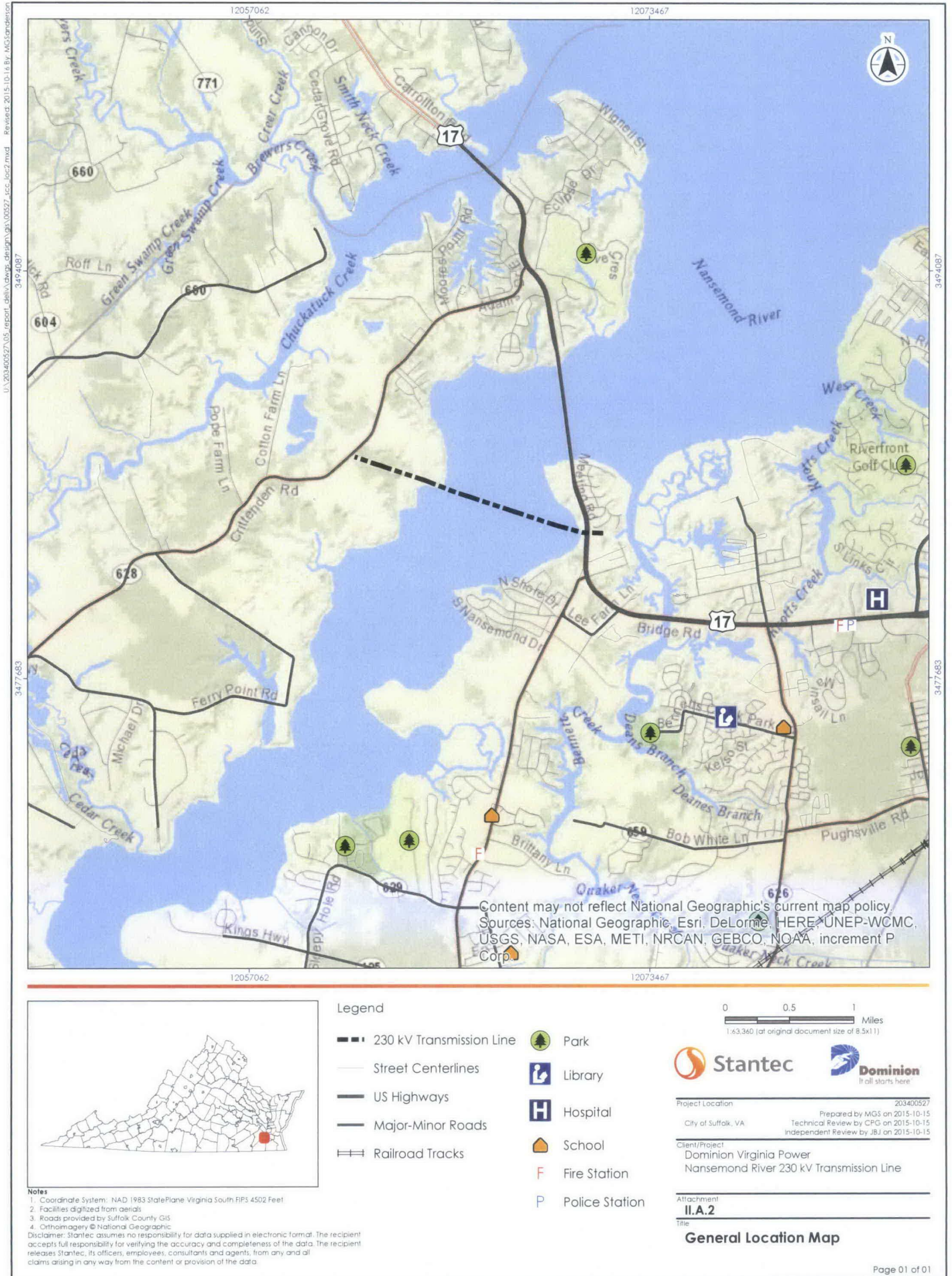
See Section II.A.7 for an explanation of the Company's route selection and consideration of alternatives.

## **II. DESCRIPTION OF THE PROPOSED PROJECT**

### **A. Right-of-way (ROW)**

- 2. Provide a map of suitable scale showing the route of the proposed line and its relation to: the facilities of other public utilities which could influence the route selection, highways, streets, parks and recreational areas, scenic and historic areas, schools, convalescent centers, hospitals, airports and other notable structures close to the proposed project. Indicate the existing facilities which the line is proposed to follow, such as existing ROW, railroad tracks, etc.**

Response: See Attachment II.A.2.



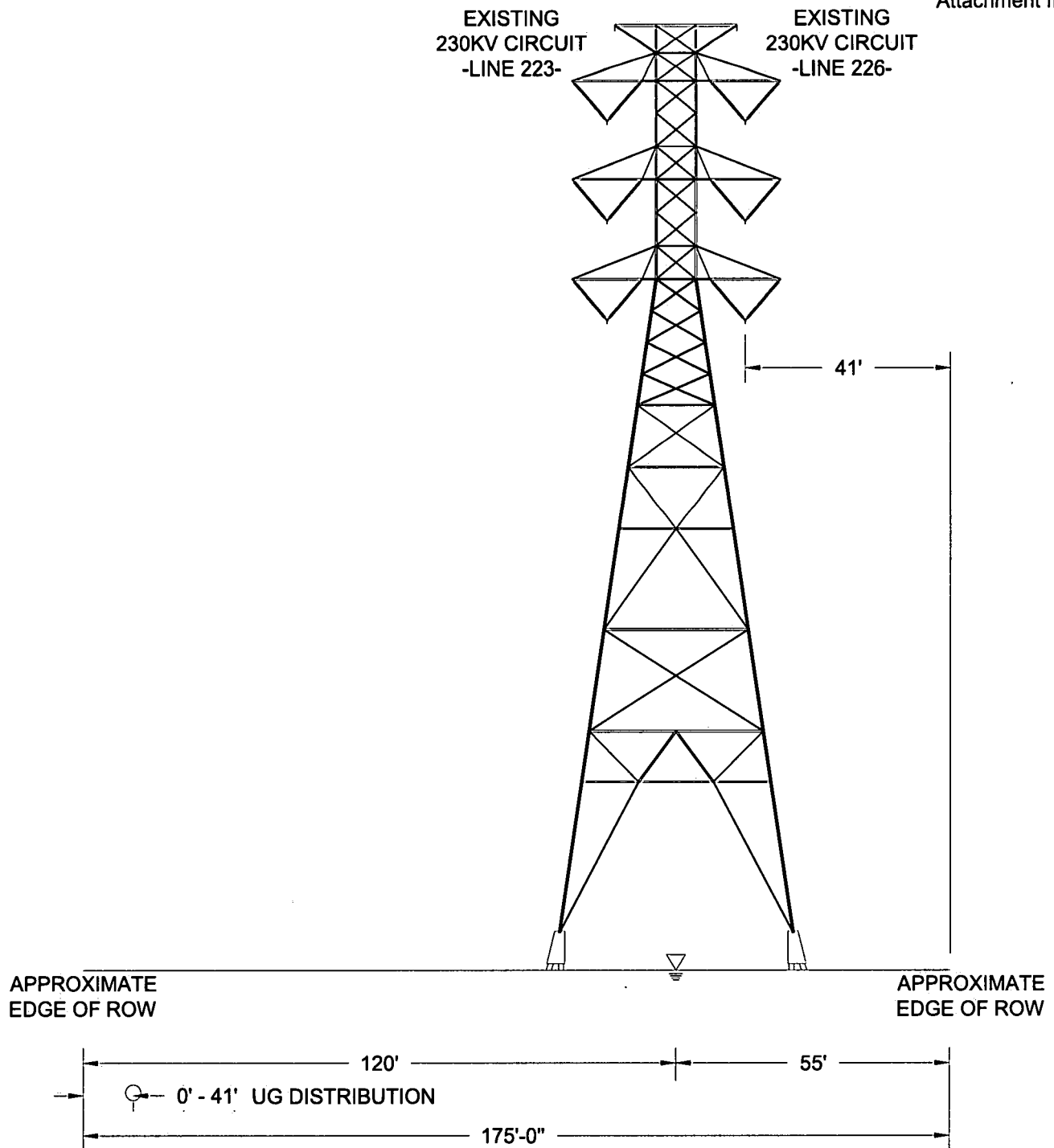


## **II. DESCRIPTION OF THE PROPOSED PROJECT**

### **A. Right-of-way (ROW)**

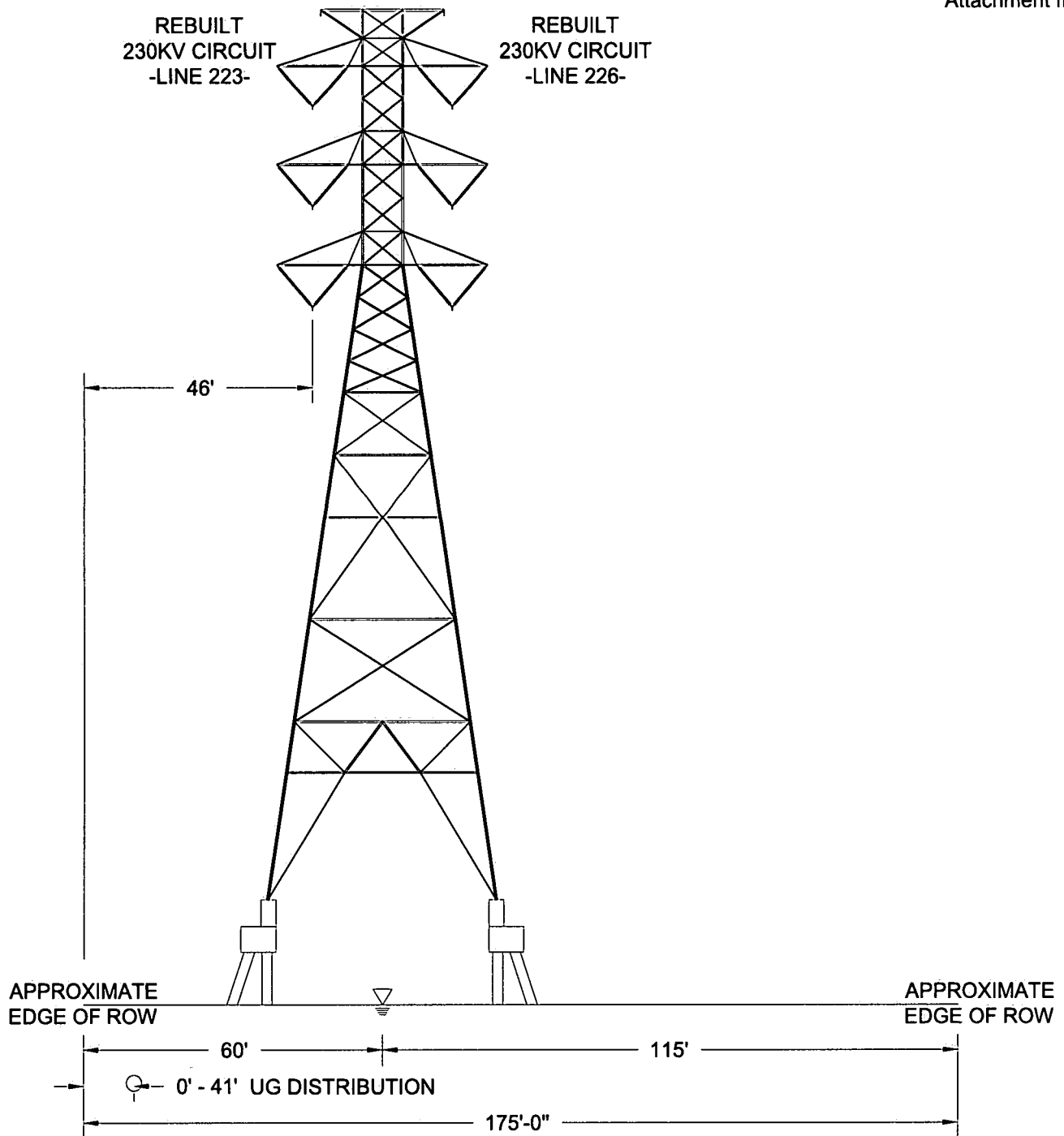
- 3. Provide a drawing(s) of the ROW cross section showing typical transmission line structure placements referenced to the edge of the right-of-way. This drawing should include:**
  - a. ROW width for each cross section drawing;**
  - b. Lateral distance between the conductors and edge of ROW; and**
  - c. Existing utility facilities on the ROW.**

**Response:** See Attachments II.A.3.a through d.



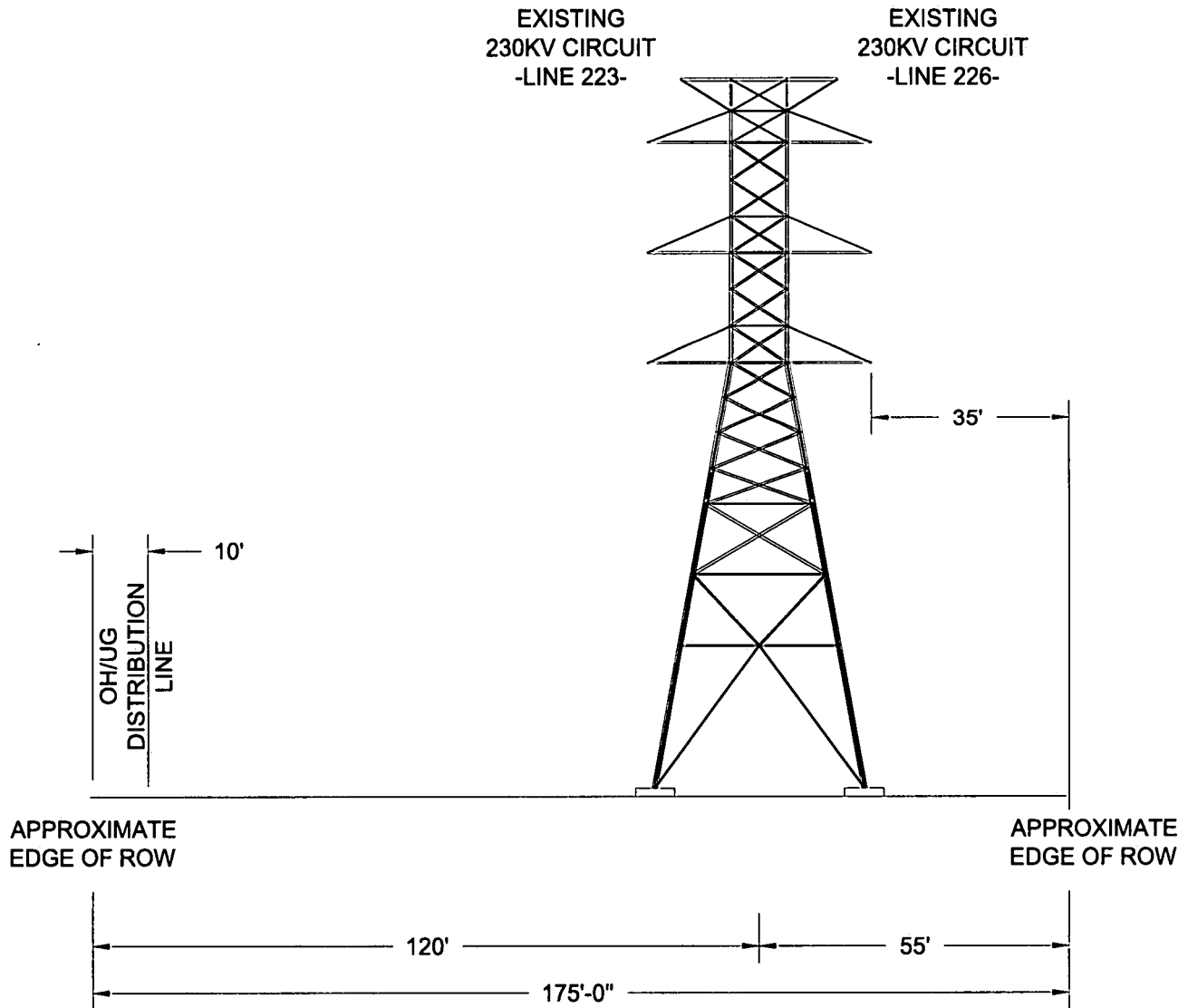
**EXISTING TYPICAL RIVER STRUCTURE**  
**TYPICAL RIGHT OF WAY LOOKING TOWARD CRITTENDEN SUB**

STRUCTURE TYPE:	LATTICE STEEL TOWER
FOUNDATION MATERIAL:	CONCRETE/STEEL PILE
APPROXIMATE <u>AVERAGE</u> HEIGHT (ABOVE ELEV. 0.0):	200'
CROSS ARM WIDTH OF <u>TYPICAL</u> STRUCTURE:	42'
BASE WIDTH OF <u>TYPICAL</u> STRUCTURE:	47'
APPROXIMATE <u>AVERAGE</u> SPAN LENGTH:	1134'
ROW WIDTH:	175'



## PROPOSED TYPICAL RIVER STRUCTURE TYPICAL RIGHT OF WAY LOOKING TOWARD CRITTENDEN SUB

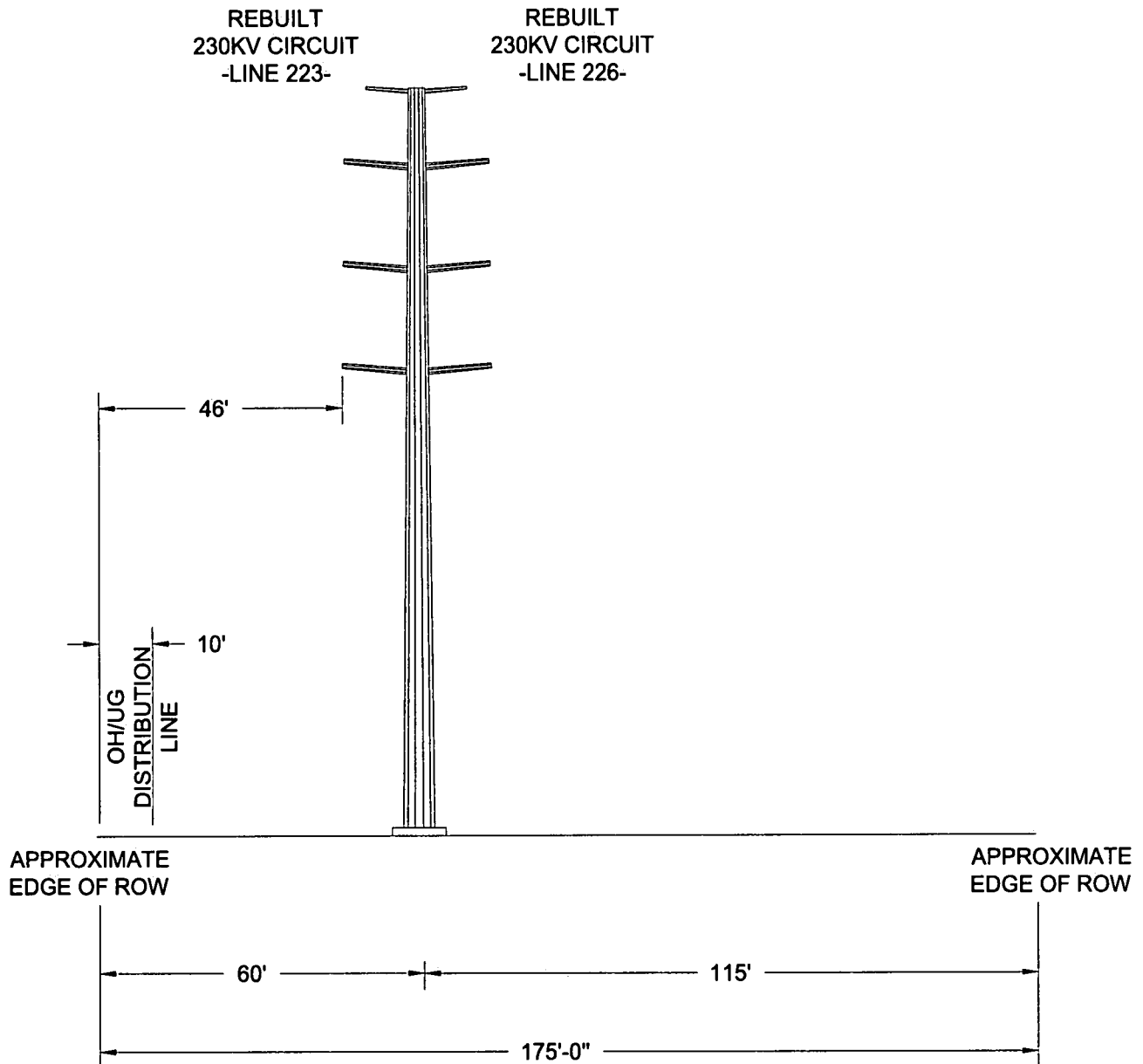
STRUCTURE TYPE:	LATTICE STEEL TOWER
FOUNDATION MATERIAL:	CONCRETE/STEEL PILE
APPROXIMATE <u>AVERAGE</u> HEIGHT (ABOVE ELEV. 0.0):	209'
CROSS ARM WIDTH OF <u>TYPICAL</u> STRUCTURE:	42'
BASE WIDTH OF <u>TYPICAL</u> STRUCTURE:	46'
APPROXIMATE <u>AVERAGE</u> SPAN LENGTH:	1140'
ROW WIDTH:	175'



**EXISTING TYPICAL RIVER BANK STRUCTURE**  
**TYPICAL RIGHT OF WAY LOOKING TOWARD CRITTENDEN SUB**

STRUCTURE TYPE:	LATTICE STEEL TOWER
FOUNDATION MATERIAL:	CONCRETE/STEEL PILE
APPROXIMATE <u>AVERAGE</u> HEIGHT (ABOVE GRADE):	134'
CROSS ARM WIDTH OF <u>TYPICAL</u> STRUCTURE:	40'
BASE WIDTH OF <u>TYPICAL</u> STRUCTURE:	43'
APPROXIMATE <u>AVERAGE</u> SPAN LENGTH:	987'
ROW WIDTH:	175'





### PROPOSED TYPICAL RIVER BANK STRUCTURE TYPICAL RIGHT OF WAY LOOKING TOWARD CRITTENDEN SUB

STRUCTURE TYPE:	STEEL MONOPOLE
FOUNDATION MATERIAL:	CONCRETE/STEEL PILE
APPROXIMATE <u>AVERAGE</u> HEIGHT (ABOVE GRADE):	149'
CROSS ARM WIDTH OF <u>TYPICAL</u> STRUCTURE:	28'
BASE WIDTH OF <u>TYPICAL</u> STRUCTURE:	8'
APPROXIMATE <u>AVERAGE</u> SPAN LENGTH:	980'
ROW WIDTH:	175'

## II. DESCRIPTION OF THE PROPOSED PROJECT

### A. Right-of-way (ROW)

#### 4. Detail what portions of the ROW are subject to existing easements and over what portions easements will be needed.

Response: The entirety of the approximately 1.3-mile long transmission line corridor in the City of Suffolk contains an existing transmission line right-of-way, inclusive of easements located in the Nansemond River for 230 kV Surry-Yadkin Line #223 and Churchland-Surry Line #226 transmission lines. The existing transmission line corridor is 175 feet wide. Most of the easement for this right-of-way was acquired in the late 1960s.

The proposed Rebuild Project will involve removing seven existing 230 kV double circuit lattice structures for Lines #223 and #226 and replacing them with five new 230 kV double circuit lattice structures and two new 230 kV double circuit monopole structures that will support Lines #223 and #226. The new structures will be located entirely within the existing right-of-way. No new easements will be required for this Rebuild Project.

Structure Number	Existing Structure Type	Top of Existing Structure above NAVD88 = 0 (ft.)	Proposed Structure Type	Top of Proposed Structure above NAVD88 = 0 (ft.)
223/183, 226/156	N1+50B+30LE TOWER	188.7	N1+50B+25LE TOWER	197.0
223/184, 226/155	N1+50B+30LE TOWER	188.7	N1+50B+25LE TOWER	197.0
223/185, 226/154	N1+50B+30LE TOWER	188.7	N1+50B+25LE TOWER	197.0
223/186, 226/153	D2RCT TOWER	243.95	D2RCT TOWER	258.25
223/187, 226/152	N1+50B+30LE TOWER	188.7	N1+50B+25LE TOWER	197.0
223/182, 226/157	N4+20B+20LE TOWER	141.5	Monopole	161.5
223/188, 226/151	N4+STD+25LE TOWER	126.5	Monopole	136.5

An existing three-phase distribution line runs under the river parallel to Lines #223 and #226 and is offset approximately 0-41 feet from the southernmost edge of the transmission line right-of-way. The Company is in

the process of field verification of the location of the distribution line. Relocation of the existing distribution line may be required as a part of the Rebuild Project.

Within the Nansemond River, the Rebuild Project crosses four private oyster lease areas, plat numbers 18719, 18717, 15555, and 15575. The surveyed limits of these areas were obtained from the Virginia Marine Resources Commission (“VMRC”) and are shown on Attachment II.A.4.a. The existing easement agreements with these leaseholders require that the Company notify the leaseholders in advance of any construction. The Company has notified the leaseholders and this correspondence is included as Attachment II.A.4.b.





**Dominion**

Dominion Virginia Power  
701 East Cary Street, Richmond, VA 23219  
Mailing Address: P.O. Box 26666  
Richmond, VA 23261  
dom.com

May 28, 2015

C. Johnson and Thomas A. Hazelwood  
8433 Cherry Point Road  
Suffolk, VA 23436

Dear Neighbors:

Dominion Virginia Power will begin construction of a new electric transmission line across the Nansemond River in spring 2016, and you have been identified as a leaseholder of oyster grounds within the right of way.

The new 230 kilovolt line will be constructed adjacent to a line built in the 1960s and within the existing right of way. The current transmission structures have reached their end of life and need to be replaced. Once the new line is energized, demolition of the old structures, including their foundations, will occur. The project will be completed in early 2017.

The project is required to ensure future reliability for the Suffolk County area.

For additional information, you may also contact us by sending an email to [powerline@dom.com](mailto:powerline@dom.com) or calling 888-291-0190, Monday- Friday, 7 a.m. to 5 p.m.

Sincerely,



Julie Mills Taylor  
Senior Communications Specialist





**Dominion**<sup>®</sup>

Dominion Virginia Power  
701 East Cary Street, Richmond, VA 23219  
Mailing Address: P.O. Box 26666  
Richmond, VA 23261  
dom.com

May 28, 2015

William Newman  
P.O. Box 1294  
Exmore, VA 23350

Dear Mr. Newman:

Dominion Virginia Power will begin construction of a new electric transmission line across the Nansemond River in spring 2016, and you have been identified as a leaseholder of oyster grounds within the right of way.

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Sincerely,

A handwritten signature in black ink that reads "Julie Mills Taylor".

Julie Mills Taylor  
Senior Communications Specialist

**Dominion**

Dominion Virginia Power  
701 East Cary Street, Richmond, VA 23219  
Mailing Address: P.O. Box 26666  
Richmond, VA 23261  
dom.com

May 28, 2015

Glenda Holcomb and Edward Everett Bagnell  
P.O. Box 498  
Suffolk, VA 23434

Dear Ms. Holcomb and Mr. Bagnell:

Dominion Virginia Power will begin construction of a new electric transmission line across the Nansemond River in spring 2016, and you have been identified as a leaseholder of oyster grounds within the right of way.

The new 230 kilovolt line will be constructed adjacent to a line built in the 1960s and within the existing right of way. The current transmission structures have reached their end of life and need to be replaced. Once the new line is energized, demolition of the old structures, including their foundations, will occur. The project will be completed in early 2017.

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Sincerely,

Julie Mills Taylor  
Senior Communications Specialist

Jan. 12, 2016

Glenda Holcomb and Edward Everett Bagnell  
P.O. Box 498  
Suffolk, VA 23434

Dear Ms. Holcomb and Mr. Bagnell:

In May 2015, we mailed letters to the oyster ground leaseholders within the right of way of a proposed Dominion Virginia Power electric transmission project. The proposed project is to rebuild a segment of an existing 230 kilovolt (kV) double-circuit transmission line that crosses the Nansemond River.

We are contacting you once again to set up a meeting to discuss the project. We attempted to reach you by phone. Please call 888-291-0190 to schedule this important meeting.

We want to partner with you on this project in order to minimize the impact on your business.

**More about the Nansemond River Crossing Project**

The new transmission structures will be built near the existing structures within the same right of way corridor. The existing structures were built in the 1960s, and need to be replaced to ensure reliable electric service for the City of Suffolk and the surrounding Tidewater region. Demolition of the original structures will occur after the new transmission line is energized and will be completed within three months.

The project includes rebuilding a total of seven structures. Five existing lattice structures in the water will be replaced with five similar galvanized steel lattice structures. Two existing lattice structures – one on either side of the shore – will be replaced with two galvanized steel monopoles.

The new transmission structures in the water will be supported by taller foundations. These modern foundations are designed to reduce salt water exposure and withstand storm surges.

An application will be submitted soon to the Virginia State Corporation Commission (SCC). Pending regulatory approval and time-of-year restrictions, construction on the new transmission line will begin in summer 2016 and will be completed in early 2017.

For more information about this project, visit the Dominion website at [dom.com](http://dom.com) and search “Nansemond River.”

Sincerely,

A handwritten signature in cursive script that reads "Julie Mills Taylor".

Julie Mills Taylor  
Senior Communications Specialist

Jan. 12, 2016

William Newman  
P.O. Box 1294  
Exmore, VA 23350

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Sincerely,



Julie Mills Taylor  
Senior Communications Specialist

Jan. 12, 2016

C. Johnson and Thomas A. Hazelwood  
8433 Cherry Point Road  
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**More about the Nansemond River Crossing Project**

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For more information about this project, visit the Dominion website at [dom.com](http://dom.com) and search “Nansemond River.”

Sincerely,



Julie Mills Taylor  
Senior Communications Specialist

## II. DESCRIPTION OF THE PROPOSED PROJECT

### A. Right-of-way (ROW)

#### 5. Detail the proposed ROW clearing methods to be used and the ROW restoration and maintenance practices planned for the proposed project.

Response: The entire 175-foot width of the existing transmission line corridor is currently maintained for operation of the existing transmission facilities. Some trimming of tree limbs along the edge of the right-of-way may be conducted to support construction activities for the Rebuild Project. For any such minimal clearing, trees will be cut to no more than three inches above ground level. Trees located outside of the right-of-way that are tall enough to potentially impact the transmission facilities, commonly referred to as “danger trees,” may also need to be cut. Danger trees would be cut to no more than three inches above ground level, limbed, and would remain where felled; however, the Company expects minimal tree clearing for the Rebuild Project. Debris that is adjacent to homes will be disposed of by chipping or removal. In other areas, debris may be mulched or chipped as practicable. Clearing will be accomplished by hand in wetland areas and within 100 feet of streams, if applicable. Care will be taken not to leave debris in streams or wetland areas. Matting may be used for heavy equipment in these areas. Erosion control devices will be used on an ongoing basis during all clearing and construction activities.

Erosion control will be maintained and temporary stabilization for all soil disturbing activities will be used until the right-of-way has been restored. Upon completion of the Rebuild Project, the Company will restore the right-of-way utilizing site rehabilitation procedures outlined in the Company’s *General Erosion and Sedimentation Control Specifications for the Construction and Maintenance of Electric Transmission Lines* that is approved yearly by the Virginia Department of Environmental Quality (“DEQ”). Time of year and weather conditions may affect when permanent stabilization takes place.

This right-of-way will continue to be maintained on a regular cycle to prevent interruptions to electric service and provide ready access to the right-of-way in order to patrol and make emergency repairs. Periodic maintenance to control woody growth will consist of hand cutting, machine mowing and herbicide application.



## **II. DESCRIPTION OF THE PROPOSED PROJECT**

### **A. Right-of-way (ROW)**

#### **6. Indicate the permitted uses of the ROW.**

Response: Any non-transmission use will be permitted that:

- is in accordance with the terms of the easement agreement for the right-of-way;
- is consistent with the safe maintenance and operation of the transmission lines;
- will not restrict future line design flexibility; and
- will not permanently interfere with future construction.

Typical permitted uses, with conditions, of the rights-of-way include:

- 1) Agriculture
- 2) Nurseries
- 3) Bicycle trails
- 4) Parking lots
- 5) Other utility facilities
- 6) Recreational areas
- 7) Roadways
- 8) Fences with gates

## **II. DESCRIPTION OF THE PROPOSED PROJECT**

### **A. Right-of-way (ROW)**

- 7. Describe the Company's route selection procedures. Detail alternative routes considered. Describe the Company's efforts in considering these alternatives. Detail why the proposed route was selected and other alternatives were rejected.**

Response: The Company's route selection for transmission line rebuilds begins with a review of existing rights-of-way. This approach generally minimizes impacts on the natural and human environments and is consistent with FERC Guideline #1, which states that existing rights-of-way should be given priority when adding new transmission facilities, and §§ 56-46.1 and 56-529 of the Code of Virginia, which also promote the use of existing rights-of-way for new transmission facilities. For the proposed Rebuild Project, the existing right-of-way that currently contains that line is adequate.

Because the existing right-of-way is adequate to construct the proposed Rebuild Project, no new right-of-way is necessary. Given the availability of existing right-of-way and the statutory preference given to the use of existing rights-of-way, and because additional costs and environmental impacts would be associated with the acquisition and construction of new right-of-way, the Company did not consider any alternate routes requiring the addition of new 230 kV facilities in new rights-of-way for this Rebuild Project. The Company did consider and reject an underground alternative, as discussed in Section I.C.

## II. DESCRIPTION OF THE PROPOSED PROJECT

### A. Right-of-way (ROW)

8. **Indicate how the construction of this transmission line complies with “Guidelines for the Protection of Natural, Historic, Scenic, and Recreational Values in the Design and Location of Rights-of-Way and Transmission Facilities” adopted by the Federal Power Commission in Order No. 414 issued November 27, 1970, and now applied by the Federal Energy Regulatory Commission. These guidelines may be found in Volume 44 of the Federal Power Commission Reports, page 1,491, or Volume 35 of the Federal Register, page 18,585 (December 8, 1970). Copies of the Guidelines may also be obtained from the Office of Public Information, Federal Energy Regulatory Commission, Washington, D.C. 20426. For reference purposes a copy of the guidelines is included.**

Response: The FERC guidelines are a tool routinely used by the Company in routing its transmission line projects.

The Company utilized FERC Guideline #1 (existing rights-of-way should be given priority when adding additional facilities) by siting the proposed Rebuild Project within the existing transmission corridor.

The existing transmission line right-of-way does not cross any site listed on the National Register of Historic Places (“NRHP”). Thus, the Rebuild Project is consistent with Guideline #2 (where practical, rights-of-way should avoid sites listed on the NRHP).

The Company follows FERC construction methods on a site specific basis for typical construction projects (Guidelines #8, 10, 11, 15, 16, 18 and 22).

The Company also utilizes FERC guidelines in the clearing of right-of-way, constructing facilities and maintaining rights-of-way after construction. Moreover, secondary uses of right-of-way that are consistent with the safe maintenance and operation of facilities are permitted.

## **II. DESCRIPTION OF THE PROPOSED PROJECT**

### **A. Right-of-way (ROW)**

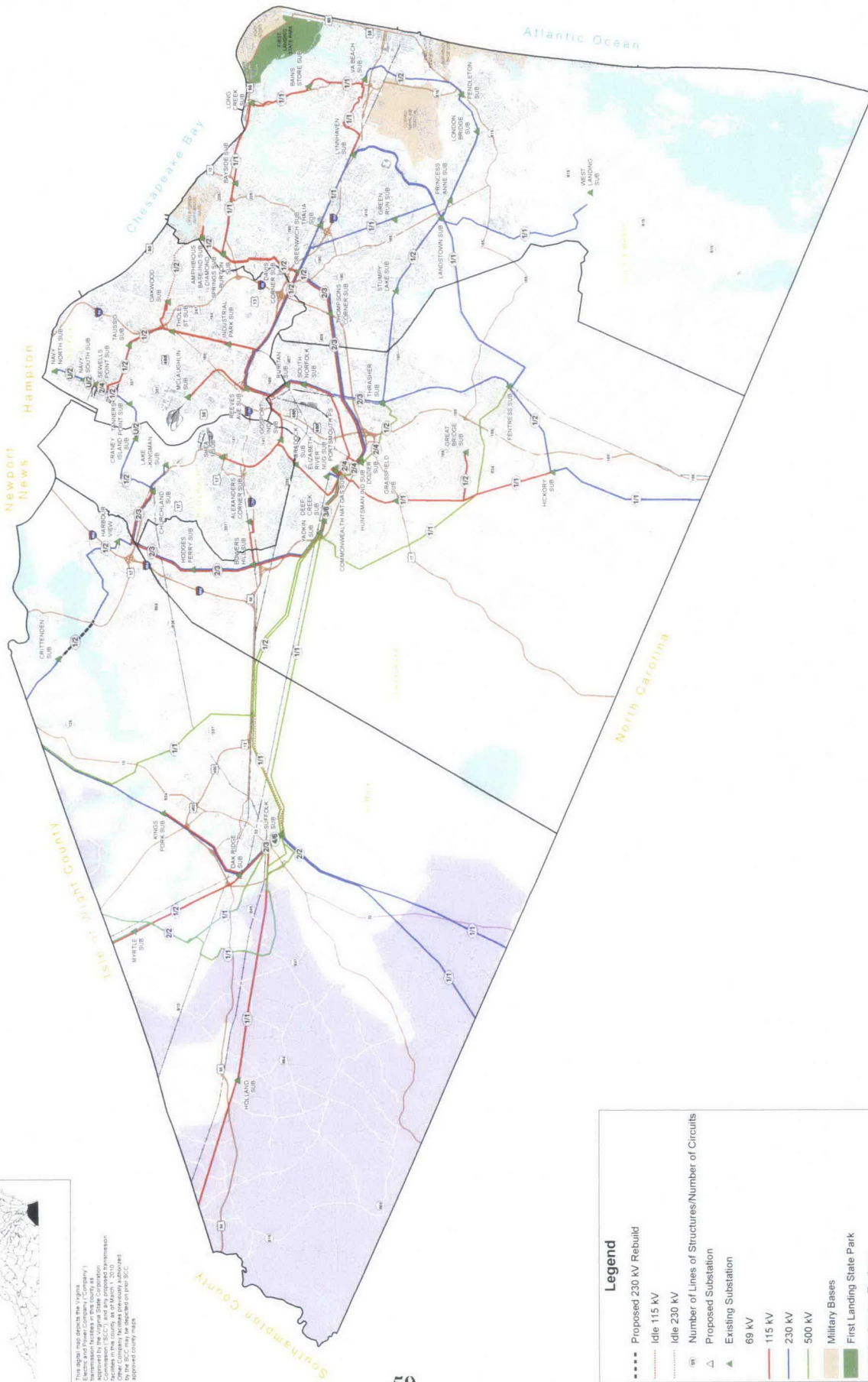
9. a. **Detail counties and localities through which the line will pass. If any portion of the line will be located outside of the applicant's certificated service area: (1) advise of each electric utility affected; (2) whether any affected electric utility objects to such construction and (3) the length of line proposed to be located in the service area of an electric utility other than the applicant;**
- b. **Provide three (3) copies of the Virginia Department of Transportation "General Highway Map" of each county and city through which the line will pass. On the maps show the proposed line and all previously approved and certificated facilities of the applicant. Also where the line will be located outside of the applicant's certificated service area; show the boundaries between the applicant and each affected electric utility. On each map showing the line outside of the applicant's certificated service area, have the appropriate individual of the affected electric utility sign if his/her company is not opposed to the proposed construction.**

- Response:
- a. The proposed Rebuild Project traverses the City of Suffolk, Virginia for approximately 1.3 miles. The entire length is wholly located within Dominion Virginia Power's service territory. The 0.7 mile of fiber work is similarly located within the City of Suffolk and the Company's service territory.
  - b. Three copies of the map of the Virginia Department of Transportation "General Highway Map" for the Southeastern Metropolitan Area are marked as required and filed with the Application in this case. A reduced copy of the map is provided as Attachment II.A.9.b.

# Southeastern Metropolitan Area Road Map



This digital map depicts the Virginia Southeastern Metropolitan Area (SEMA) as of July 2011. It is based on data provided by the Virginia Department of Transportation (VDOT) and the Virginia Electric Power Company (VEPCO). The map shows the proposed 230 kV Rebuild project, existing 115 kV and 230 kV lines, and the number of structures and number of circuits for each line. The map also shows the location of substations and the provider service territory for each area.



**Legend**

- Proposed 230 kV Rebuild
- Idle 115 kV
- Idle 230 kV
- Number of Lines of Structures/Number of Circuits
- Proposed Substation
- Existing Substation
- 69 kV
- 115 kV
- 230 kV
- 500 kV
- Military Bases
- First Landing State Park
- Provider Service Territory
- CEC
- VEPCO

**Scale**

0 1 2 3 4 5 6 Miles

2007 and other data  
 County data current as of  
 July 2011



## **II. DESCRIPTION OF THE PROPOSED PROJECT**

### **B. Line Design and Operational Features**

#### **1. Detail number of circuits and their design voltage and transfer capabilities.**

Response: The Rebuild Project proposes to rebuild 1.3 miles of the existing double circuit 230 kV Lines #223 and #226 each with a minimum transfer capability of 2628 MVA.

## **II. DESCRIPTION OF THE PROPOSED PROJECT**

### **B. Line Design and Operational Features**

#### **2. Detail number, size(s), type(s), and typical configurations of conductors.**

Response: The two rebuilt 230 kV lines will each have three-phased 768 ACSS/TW/HS-285 (20/7) twin-bundled conductors, arranged vertically. The 768 ACSS/TW/HS-285 (20/7), a trapezoidal conductor, was selected for the mechanical properties conducive for river crossings including decreased sag, increased self-damping properties, and improved corrosion resistance. In addition to the phase conductor, the shield wires will also be replaced with one shield wire above each line.

## **II. DESCRIPTION OF THE PROPOSED PROJECT**

### **B. Line Design and Operational Features**

- 3. With regard to the proposed supporting structures over each portion of the ROW provide:**
  - a. types of structures;**
  - b. length of ROW with each type of structure;**
  - c. material for typical structure (steel, oxidizing steel, etc.);**
  - d. foundation material;**
  - e. width at cross arms of typical structure;**
  - f. width at base of typical structures;**
  - g. typical span length;**
  - h. approximate average heights of structures;**
  - i. a schematic drawing of each typical structure; and**
  - j. minimum conductor-to-ground clearance under maximum operating conditions**

Response: (Attachment II.A.3.a)

- a. Structure type — Lattice Steel Tower
- b. ROW length — approximately 1.29 miles
- c. Structure material — Galvanized Steel
- d. Foundation material — Concrete and Steel Pile
- e. Cross arm width of typical structure — 42 feet
- f. Base width of typical structure — 47 feet
- g. Average span length — 1134 feet
- h. Approximate average structure height above 0.0 — 200 feet
- i. Typical structure — see Attachment II.A.3.a
- j. Minimum clearance *over Mean High Water* — (44.5-96.5) feet

(Attachment II.A.3.b)

- a. Structure type — Lattice Steel Tower
- b. ROW length — approximately 1.3 miles
- c. Structure material — Galvanized Steel
- d. Foundation material — Concrete and Steel Pile
- e. Cross arm width of typical structure — 42 feet

- f. Base width of typical structure — 46 feet
- g. Average span length — 1 140 feet
- h. Approximate average structure height above 0.0 — 209 feet
- i. Typical structure — see Attachment II.A.3.b
- j. Minimum clearance *over Mean High Water* — (44.5-96.5) feet

(Attachment II.A.3.c)

- a. Structure type — Lattice Steel Tower
- b. ROW length — approximately 0.37 mile
- c. Structure material — Weathering Steel
- d. Foundation material — Concrete and Steel Pile
- e. Cross arm width of typical structure — 40 feet
- f. Base width of typical structure — 43 feet
- g. Average span length — 987 feet
- h. Approximate average structure height above grade — 134 feet
- i. Typical structure — see Attachment II.A.3.c
- j. Minimum clearance over ground — 22.5 feet

(Attachment II.A.3.d)

- a. Structure type — Steel Monopole
- b. ROW length — approximately 0.36 mile
- c. Structure material — Galvanized Steel
- d. Foundation material — Concrete and Steel Pile
- e. Cross arm width of typical structure — 28 feet
- f. Base width of typical structure — 8 feet
- g. Average span length — 980 feet
- h. Approximate average structure height above grade — 149 feet
- i. Typical structure — see Attachment II.A.3.d
- j. Minimum clearance over ground — 22.5 feet

## **II. DESCRIPTION OF THE PROPOSED PROJECT**

### **B. Line Design and Operational Features**

#### **4. Describe why the proposed structure type(s) was selected for this line.**

Response: The proposed structure types selected for installation in the river are in the same family of lattice structures as the existing structures. The use of lattice structures is the first choice to support double circuit 230 kV transmission lines in a river crossing, because the foundations can be efficiently designed and minimize the impact to the river bottom. The Company also considered the minimum clearances previously authorized by the United States Army Corps of Engineers, while attempting to reasonably minimize the visual impact to the crossing. The required conductor clearances across the main river channel will be maintained; however, the new structures will be slightly taller overall than the current structures due to structural requirements of the foundations. Consistent with the table provided in Section II.A.4, the overall average height increase for the structures in the water will be 8 feet for four structures and 14 feet for a one structure. The difference in foundation height will lead to a perceived difference in structure height, particularly during construction when the existing structures will remain in place.

For the purpose of constructability and to allow the rebuild of the existing 230 kV double circuit lines in the existing right-of-way as the relocated line makes landfall and turns back to the existing lattice structures, the proposed land structures will be engineered double circuit single shaft poles. The monopole structures on the shore will be 10 feet and 20 feet taller than the existing structures and were selected to limit the impact of the foundation and structure footprint on land where existing approved above grade distribution encroachments within the right-of-way exist.



## **II. DESCRIPTION OF THE PROPOSED PROJECT**

- C. Describe and furnish plan drawings of all new substations, switching stations, and other ground facilities associated with the proposed project.**

Response: Not applicable.

### **III. IMPACT OF LINE ON SCENIC, ENVIRONMENTAL AND HISTORIC FEATURES**

- A. Describe the character of the area which will be traversed by this line, including, land use, wetlands, etc. Provide the number of dwellings within 500 feet of the line for each route considered.**

**Response:** The Rebuild Project traverses approximately 1.3 miles through the City of Suffolk in an area that is largely characterized by rural to low density residential land use. Immediately adjacent to the Rebuild Project area on the western side of the Nansemond River is the Crittenden Sand Pit. Large vehicular traffic such as hauling trucks and dump trucks are frequent along Crittenden Road. Approximately 90% of the Rebuild Project area falls within the Nansemond River, which is a tidal salt water environment at the crossing location.

A detailed investigation of waters of the U.S., including wetlands, was conducted by Stantec Consulting Services Inc. ("Stantec") for the Rebuild Project. Prior to conducting fieldwork, Stantec consulted the U.S. Geological Survey ("USGS") 7.5 minute Topographical Quadrangle Map for Benns Church, Virginia (1992 revision) and Bowers Hill, Virginia (2000), the National Wetlands Inventory Interactive Mapper ("NWI"), administered by the U.S. Fish and Wildlife Service ("USFWS") and the Web Soil Survey, administered by the Natural Resources Conservation Service ("NRCS"). The USGS quad maps show the Rebuild Project area within an existing cleared right-of-way with gently sloping to moderately sloping terrain. Furthermore, the Nansemond River, Bennett Creek, and tidal wetlands are mapped within the Rebuild Project limits. The NWI map depicted estuarine and emergent wetlands and estuarine and marine deepwater within the Rebuild Project limits.

Wetlands and other Waters of the United States ("WOUS") within the Rebuild Project area were delineated by Stantec in accordance with the method outlined in the 1987 Corps of Engineers Wetlands Delineation Manual, and the 2010 Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Atlantic and Gulf Coastal Plain (Version 2.0). Wetland flags were placed in the field and sequentially numbered to provide an on-site record of the delineation. In total, approximately 1.64 acres of palustrine emergent wetlands, 6.53 acres of estuarine emergent wetlands and approximately 2,137 linear feet (24.5 acres) of the Nansemond River were identified within the Rebuild Project area. The Corps provided a preliminary jurisdictional determination confirming the presence of these features on October 20, 2015.

In accordance with the *Guidelines for Assessing Impacts of Proposed Transmission Lines and Associated Facilities on Historic Resources in the Commonwealth of Virginia (2008)*, a Stage I pre-application analysis was conducted by Stantec. This report is included as Attachment 2.H.1 to the DEQ Supplement. The report includes the results of background research Stantec conducted to identify previously recorded cultural resources within the tiered study areas identified in the Virginia Department of Historic Resources (“DHR”) guidelines. The background archival research did not find any National Historic Landmark (“NHL”) listed resources within the 1.5-mile buffer, nor any resources listed on the NRHP, battlefields or historic landscapes within the 1-mile buffer. A single eligible resource was found within the 0.5-mile buffer and is the Town Point Farm (DHR #133-0242). Town Point Farm is located approximately 0.3 mile from the Rebuild Project. Because the proposed Rebuild Project is consistent with the transmission line which is currently in place, the analysis recommended that the Rebuild Project would only have a minimal visual effect to Town Point Farm (DHR #133-0242).

In addition, research indicates that a portion of the Captain John Smith Chesapeake National Historic Trail (or “Trail”) is crossed at the Nansemond River by the Rebuild Project. While not a traditionally documented historic resource, the Trail has been identified recently as a potential historic resource and is therefore noted here and considered as part of this assessment. Because the proposed Rebuild Project is consistent with the transmission facilities which are currently in place, the analysis recommended that the Rebuild Project would have a minimal visual effect to the Captain John Smith Chesapeake National Historic Trail.

Online database searches for threatened and endangered species were completed by Stantec for the Rebuild Project. The search included the U.S. Fish and Wildlife Service (“USFWS”) Information, Planning, and Conservation system, the Virginia Department of Game and Inland Fisheries (“DGIF”) Virginia Fish and Wildlife Information Service, the Virginia Department of Conservation and Recreation Natural Heritage Resources Database, and the Center for Conservation Biology Bald Eagle Nest Locator for Virginia. The results identified several listed species that have the potential to occur within the vicinity of the Rebuild Project. These resources are identified in the report included as Attachment 2.F.1 of the DEQ Supplement. The Company intends to minimize any impact on these resources and coordinate with the USFWS and the DGIF as appropriate.

There are 19 homes and two businesses located within 500 feet of the centerline and two homes located within 100 feet of the centerline of existing Lines #223 and #226.

### III. IMPACT OF LINE ON SCENIC, ENVIRONMENTAL AND HISTORIC FEATURES

**B. Advise of any public meetings the Company has had with neighborhood associations and officials of local, state or federal governments who would have an interest or responsibility with respect to affected area or areas.**

Response: In accordance with Va. Code § 15.2-2202 D, a letter dated December 15, 2015, included as Attachment III.B.1, was delivered to Suffolk City Manager Patrick Roberts advising of the Company's intention to file this application and inviting the City to consult with the Company about the Rebuild Project. In addition, in December 2015 and January 2016 the Company met and spoke with a number of local and state officials and property owners in the Suffolk area about the Rebuild Project.

Additional information is provided to the public through an internet website dedicated to the Rebuild Project:

[www.dom.com/corporate/what-we-do/electricity/transmission-lines-and-projects/nansemond-river-crossing](http://www.dom.com/corporate/what-we-do/electricity/transmission-lines-and-projects/nansemond-river-crossing)

The website includes route maps, an explanation of need, a description of the Rebuild Project and its benefits, information on the Commission review process, structure diagrams and answers to frequently asked questions.

Letters were sent to more than 200 property owners inviting them to attend a community open house on Thursday, January 7, 2016 in Suffolk to share specific details relating to construction and the Commission certification process, as well as answer any questions. The letter and included fact sheet, included as Attachment III.B.2, advised readers to visit [www.dom.com](http://www.dom.com) and enter the search term "Nansemond River" for more information regarding the Rebuild Project. Eleven people attended the open house.

In addition to the letters, advertisements for the open house, included as Attachment III.B.3, were placed in The Sun and the Suffolk News-Herald prior to the event.

All of the open house materials have been posted on the Rebuild Project website.



**Stantec Consulting Services Inc.**  
5209 Center Street, Williamsburg, Virginia 23188

December 15, 2015

**Attention: Patrick Roberts**

City of Suffolk  
PO Box 1858  
Suffolk, Virginia 23439

Dear Mr. Roberts,

**Reference: Proposed Nansemond River 230kV Transmission Line Crossing Rebuild**

Stantec Consulting Services Inc. (Stantec) is assisting Dominion Virginia Power (Dominion) with the proposed Nansemond River 230 kV Transmission Line Crossing Rebuild project located in Suffolk, Virginia. Dominion is proposing to rebuild a portion of an existing overhead transmission line (Line 223/226) which crosses the Nansemond River approximately 1 mile upstream of the US 17/Mills E. Godwin Bridge (Project Overview Map attached). The partial rebuild will stretch approximately 1.3 miles across the Nansemond River and include six spans of Line 223/226, with replacement of the static line extending an additional three spans to the west and one span to the east for a total project length of approximately 2 miles. Originally constructed in 1968, Line 223/226 is a strategic double circuit 230kV transmission line servicing the south side of Hampton Roads. The existing towers and associated hardware are original to the transmission line's construction and are approaching the end of their designed service life. Given the tidal, salt water environment where the crossing is located, the existing towers have lost considerable galvanizing and the foundations have experienced significant deterioration, undermining the integrity of the transmission line.

To replace this aging infrastructure, Dominion is proposing to construct a new river crossing which ties into the land base portion of the existing transmission line. The new crossing will consist of five steel lattice towers within the river, adjacent to the existing towers. In addition, the first landward tower on either bank is proposed to be replaced with a new monopole structure. The new crossing will be constructed first, upstream of the existing crossing and within Dominion's existing 175 foot transmission line right of way. Once the new structures are in place, new conductor wire will be installed to tie the crossing into the existing land base portion of the transmission line and the old towers will be removed.

Dominion is preparing an application for a Certificate of Public Convenience and Necessity from the State Corporation Commission (SCC) and anticipates filing the application in January. Pursuant to the Code of Virginia §15.2-2202, this letter is to notify the City of Suffolk of the proposed project in advance of the SCC filing. At this time, we respectfully request that you submit any comments or additional information you feel would have bearing on the proposed project. If you would like to receive a GIS shapefile of the transmission line route to assist in your project review or if you have any questions, please do not hesitate to contact me at (757) 220-

*Design with community in mind*



December 15, 2015  
Mr. Patrick Roberts  
City of Suffolk  
Page 2 of 2

**Reference: Proposed Nansemond River 230kV Transmission Line Crossing Rebuild**

6869 or [jennifer.johnson@stantec.com](mailto:jennifer.johnson@stantec.com). We appreciate your assistance with this project review and look forward to any additional information you may have to offer.

Regards,

**STANTEC CONSULTING SERVICES INC.**

A handwritten signature in black ink, appearing to read "Jennifer B. Johnson".

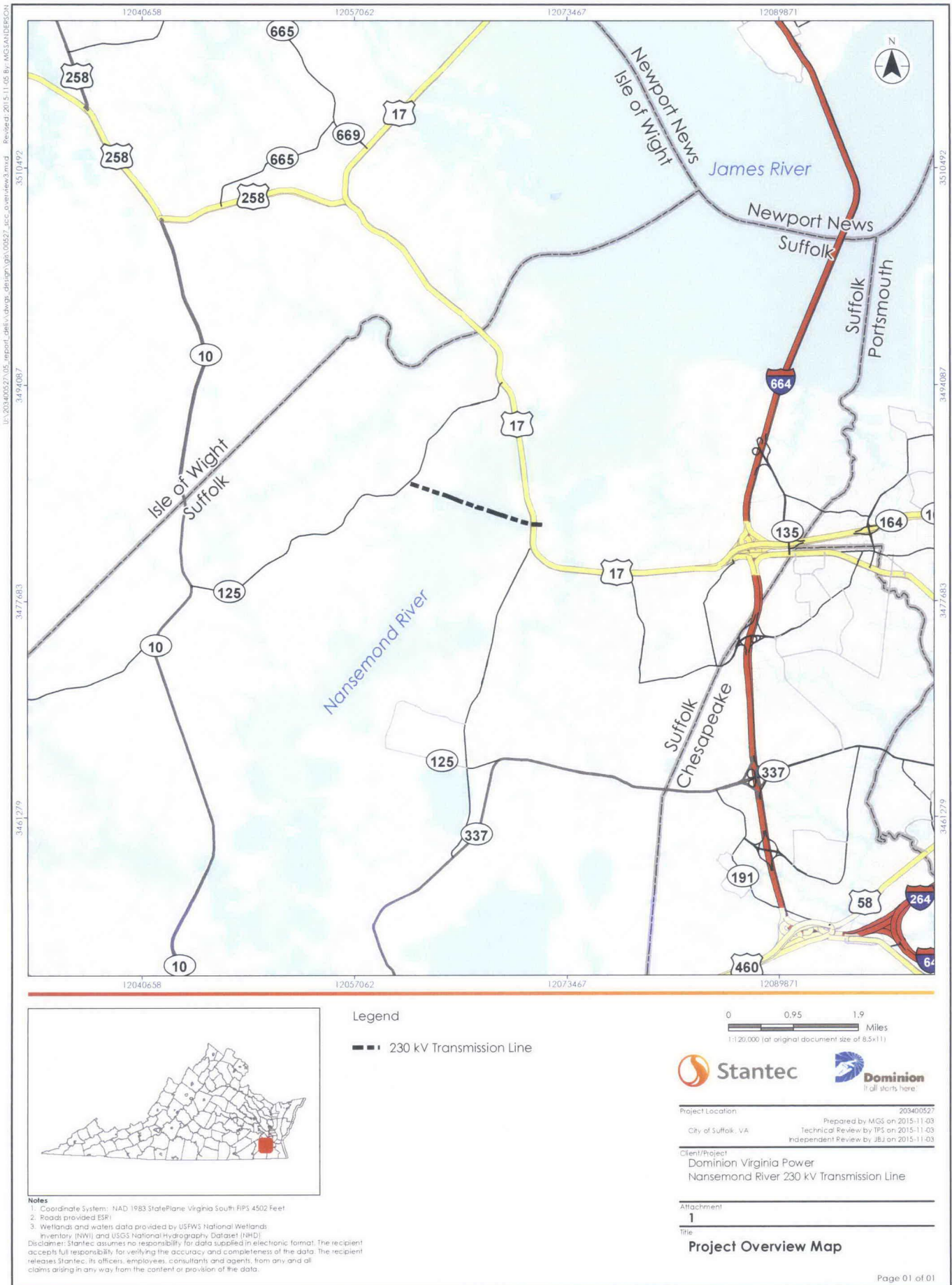
Jennifer B. Johnson  
Regulatory Specialist  
Phone: (757) 220-6869  
Fax: (757) 229-4507  
[jennifer.johnson@stantec.com](mailto:jennifer.johnson@stantec.com)

Attachment: Project Overview Map

cc: Nadiah F. Younus, Dominion Virginia Power

Design with community in mind





December 17, 2015

***Community Open House Regarding Proposed Transmission Line Rebuild***

Dear Neighbor:

Dominion Virginia Power is proposing a project to rebuild a segment of an existing 230 kilovolt (kV) double-circuit electric transmission line that crosses the Nansemond River. Since your property is located near the right of way corridor, Dominion would like to share information about the project.

The new transmission structures will be built near the existing structures within the same right of way corridor. The existing structures were built in the 1960s, and need to be replaced to ensure reliable electric service for the City of Suffolk and the surrounding Tidewater region. Demolition of the original structures will occur after the new transmission line is energized and will be completed within three months.

The project includes rebuilding a total of seven structures. Five existing lattice structures in the water will be replaced with five similar galvanized steel lattice structures. Two existing lattice structures – one on either side of the shore – will be replaced with two galvanized steel monopoles.

The new transmission structures in the water will be supported by taller foundations. These modern foundations are designed to reduce salt water exposure and withstand storm surges.

An application will be submitted to the Virginia State Corporation Commission (SCC). Pending regulatory approval and time-of-year restrictions, construction on the new transmission line will begin in summer 2016 and will be completed in early 2017.

**Community Open House**

Dominion plans to host a community open house to share specific details relating to construction and the SCC process, as well as answer any questions:

**Date:** Thursday, January 7, 2016

**Time:** 5-7 p.m.

**Location:** Hilton Garden Inn, 5921 Harbour View Blvd., Suffolk, Virginia 23435

There will be no formal presentation at this event, so you are invited to come by at your convenience to speak with subject matter experts.

Enclosed is a copy of the project fact sheet. For more information about this project, visit the Dominion website at [dom.com](http://dom.com) and search "Nansemond River." You can also send an email to [powerline@dom.com](mailto:powerline@dom.com) or call 888-291-0190 to speak with a member of the Electric Transmission team.

Sincerely,



Julie Mills Taylor, Senior Communications Specialist



**Dominion®**

# INFORMATIONAL OPEN HOUSE

## Nansemond River Crossing Project

Dominion Virginia Power is proposing a project to rebuild a segment of an existing 230 kilovolt (kV) double-circuit electric transmission line that crosses the Nansemond River.

The existing transmission structures need to be replaced to ensure reliable electric service for the City of Suffolk and the surrounding Tidewater region. Demolition of the original structures will occur after the new transmission line is energized.

We plan to submit a project application to the Virginia State Corporation Commission.

Stop by our open house event to learn more about what this project will mean for you and the community. We want to share our plans and hear your views prior to submitting the project application.

*For more information regarding the Nansemond River Crossing Project, visit our website at [www.dom.com](http://www.dom.com), keyword: Nansemond River.*

*Or call 888-291-0190 Monday-Friday, 7 a.m. - 5 p.m. For routine business or reporting an outage, please call 866-DOM-HELP (866-366-4357).*

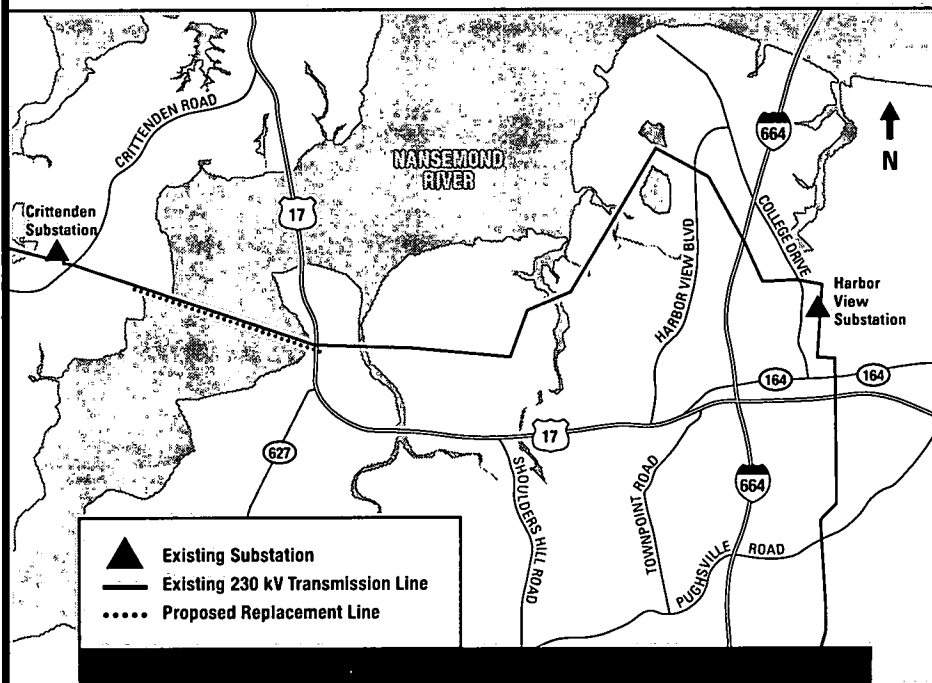
### OPEN HOUSE

THURSDAY, JAN. 7, 2016

5-7 p.m.

Hilton Garden Inn

5921 Harbour View Blvd.  
Suffolk, Virginia 23435





# INFORMATIONAL OPEN HOUSE

## Nansemond River Crossing Project

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The existing transmission structures need to be replaced to ensure reliable electric service for the City of Suffolk and the surrounding Tidewater region. Demolition of the original structures will occur after the new transmission line is energized.

We plan to submit a project application to the Virginia State Corporation Commission.

Stop by our open house event to learn more about what this project will mean for you and the community. We want to share our plans and hear your views prior to submitting the project application.

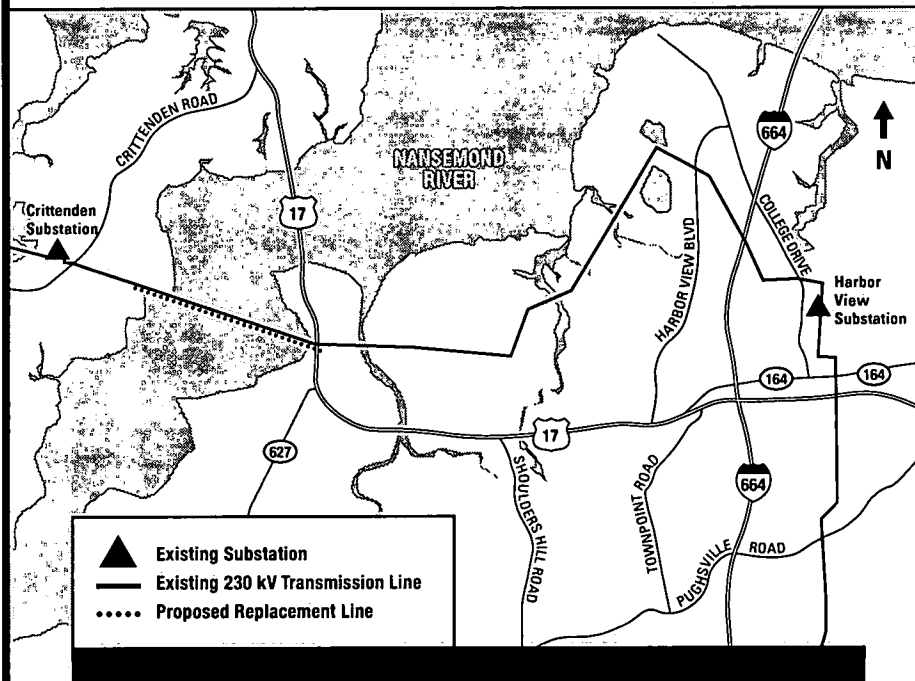
For more information regarding the Nansemond River Crossing Project, visit our website at [www.dom.com](http://www.dom.com), keyword: Nansemond River. Or call 888-291-0190 Monday-Friday, 7 a.m. - 5 p.m. For routine business or reporting an outage, please call 866-DOM-HELP (866-366-4357).

### OPEN HOUSE

THURSDAY, JAN. 7, 2016

5 - 7 p.m.

Hilton Garden Inn  
5921 Harbour View Blvd.  
Suffolk, Virginia 23435



**III. IMPACT OF LINE ON SCENIC, ENVIRONMENTAL AND HISTORIC FEATURES**

- C. Detail the nature, location, and ownership of all buildings which would have to be demolished or relocated if the project is built as proposed.**

Response: The Company is not aware of any residences encroaching within the existing corridor and does not expect to have any residences demolished or relocated in connection with the Rebuild Project.

### **III. IMPACT OF LINE ON SCENIC, ENVIRONMENTAL AND HISTORIC FEATURES**

- D. What existing physical facilities will the line parallel, if any, such as existing transmission lines, railroad tracks, highways, pipelines, etc.? Describe the current use and physical appearance and characteristics of the existing right-of-way that would be paralleled. How long has the right-of-way been in use?**

Response: Lines #223 and #226 were constructed in the late 1960s and the existing right-of-way has been in use since that time. An existing distribution line runs parallel to Line #223 and #226 and is offset approximately 0-41 feet from the southernmost edge of the 175-foot wide transmission line corridor. At the Nansemond River crossing, the existing distribution line runs under the river. There is an existing adjacent, parallel distribution line located within the existing maintained right-of-way. In addition, the existing right-of-way crosses over Bridge Road (US 17) approximately 0.5 mile south of the Mills E. Godwin Bridge.



### **III. IMPACT OF LINE ON SCENIC, ENVIRONMENTAL AND HISTORIC FEATURES**

- E. Has the Company investigated land use plans in the areas of the proposed route? How would the building of the proposed line effect future land use of the areas affected?**
- 1. Has the Company determined from the governing bodies of each county, city and town in which the proposed facilities will be located whether those bodies have designated the important farmlands within their jurisdictions, as required by Virginia Code Section 3.2-205 B?**
  - 2. If so, and if any portion of the proposed facilities will be located on any such important farmland, please:**
    - a. Include maps and other evidence showing the nature and extent of the impact on such farmlands.**
    - b. Describe what alternatives exist to locating the proposed facilities on the affected farmlands, and why those alternatives are not suitable.**
    - c. Describe the applicant's proposals to minimize the impact of the facilities on the affected farmland.**

**Response:** According to the Comprehensive Plan for the City of Suffolk adopted in 2015, the Rebuild Project is located within one of the City's two Suburban/Urban Growth Areas. The Northern Growth Area where the Rebuild Project is located is focused around major transportation routes and provides a focus for development in order to reduce urban sprawl across more rural, agricultural parts of the City. The area surrounding the Rebuild Project is zoned as Rural Estate, Rural Residential, and Low Density Residential. The placement and construction of electric transmission lines is not addressed in the Comprehensive Plan. The Comprehensive Plan instead addresses organized development of the City, including existing and future plans, and the preservation of important features such as farmland and environmentally-sensitive areas. The Rebuild Project will not impact future development plans because the Rebuild Project is a rebuild of an existing transmission line.

- 1. The City of Suffolk has identified Prime Farmland throughout the Northern Suburban/Urban Growth Area, including within the Rebuild Project area. The City's Comprehensive Plan encourages development within this area in order to preserve larger expanses of Prime Farmland in the southern portion of the City.**
- 2. a. See Attachment III.E.2.a.**

- b. The Company is proposing to rebuild a portion of an existing double circuit line. The existing corridor is adequate to construct the proposed Rebuild Project and no new right-of-way is necessary. Given the availability of existing right-of-way and the statutory preference given to the use of existing rights-of-way, and because additional costs and environmental impacts would be associated with the acquisition and construction of new right-of-way, the Company did not consider any alternative routes requiring the addition of new 230 kV facilities in new rights-of-way for this Rebuild Project. The Company did consider and reject an underground alternative, as discussed in Section I.C.
- c. As the proposed Rebuild Project involves rebuilding a portion of an existing line and is consistent with the City's Comprehensive Plan, no impacts to Prime Farmland are anticipated.



### **III. IMPACT OF LINE ON SCENIC, ENVIRONMENTAL AND HISTORIC FEATURES**

#### **F. Identify the following that lie within or adjacent to the proposed right-of-way:**

- 1. Any district, site, building, structure, or other object included in the National Register of Historic Places maintained by the U.S. Secretary of the Interior;**
- 2. Any historic landmark, site, building, structure, district or object included in the Virginia Landmarks Register maintained by the Virginia Board of Historic Resources;**
- 3. Any historic district designated by the governing body of any city or county;**
- 4. Any state archaeological site or zone designated by the Director of the Virginia Department of Historic Resources, or his predecessor, and any site designated by a local archaeological commission, or similar body;**
- 5. Any underwater historic property designated by the Virginia Department of Historic Resources, or predecessor agency or board;**
- 6. Any National Natural Landmark designated by the U.S. Secretary of the Interior;**
- 7. Any area or feature included in the Virginia Registry of Natural Areas maintained by the Virginia Department of Conservation and Recreation;**
- 8. Any area accepted by the Director of the Virginia Department of Conservation and Recreation for the Virginia Natural Area Preserves System;**
- 9. Any conservation easement qualifying under Sections 10.1-1009 to -1016 of the Code of Virginia, or prior provision of law;**
- 10. Any state scenic river;**
- 11. Any federal state, or local park, forest, game or wildlife preserve, recreational area, or similar facility; Features, sites, and the like listed in 1 through 10 above need not be identified again.**

Response:

1. None.
2. Town Point Farm (DHR #133-0242) lies adjacent to the existing right-of-way, which has been determined NRHP-eligible by the DHR.
3. None.
4. The existing corridor is adjacent to three archaeological sites, none of which have been evaluated for NRHP listing. The site numbers are 44SK0170, 44SK0172, 44SK0487.
5. None.
6. None.
7. None
8. None.
9. None.
10. None.
11. The existing corridor crosses the Captain John Smith Chesapeake National Historic Trail (Voyage 2) and the DGIF Virginia Birding and Wildlife Trail.

### **III. IMPACT OF LINE ON SCENIC, ENVIRONMENTAL AND HISTORIC FEATURES**

- G. List any airports where the proposed route would place a structure or conductor within the glide path of the airport. Advise of contacts and results of contacts made with appropriate officials regarding the effect on the airport's operations.**

Response: The Federal Aviation Administration ("FAA") is responsible for overseeing air transportation in the United States. The FAA manages air traffic in the United States and evaluates physical objects that may affect the safety of aeronautical operations through an obstruction evaluation. The prime objective of the FAA in conducting an obstruction evaluation is to ensure the safety of air navigation and the efficient utilization of navigable airspace by aircraft.

The FAA's website (<https://oeaaa.faa.gov/oeaaa/external/portal.jsp>) was reviewed to identify airports within 10 nautical miles of the proposed Rebuild Project. Based on this review, two airports were identified, Hampton Roads Executive Airport (PVG), located approximately 6.5 nautical miles south/southeast in Chesapeake, and Comlantflt Heliport (NCL), located approximately 10 nautical miles to the east/northeast in Norfolk. The FAA's online Notice Criteria Tool was used in order to evaluate whether the proposed Rebuild Project would require notification to the FAA. Based on the results of this review, the Rebuild Project does exceed Notice Criteria and notification to the FAA is required. The Company will continue to coordinate with the FAA.



### **III. IMPACT OF LINE ON SCENIC, ENVIRONMENTAL AND HISTORIC FEATURES**

- H. Advise of any scenic byways that are in close proximity to or will be crossed by the proposed transmission line and describe what steps will be taken to mitigate any visual impacts on such byways. Describe typical mitigation techniques for other highway's crossings.**

Response: The existing corridor to be used for the Rebuild Project does not cross any scenic byways. Use of the existing right-of-way minimizes or eliminates incremental impacts at any rural road crossings.

#### IV. HEALTH ASPECTS OF EMF

- A. State the calculated maximum electric and magnetic field (EMF) levels that are expected to occur at the edge of the right-of-way. If the new transmission line is to be constructed on an existing electric transmission line right-of-way, provide the present EMF levels as well as the maximum levels calculated at the edge of right-of-way after the new line is operational.

Response: Public exposure to magnetic fields is best estimated by field levels from power lines calculated at annual average loading. For any day of the year, the EMF levels associated with average conditions provide the best estimate of potential exposure. Maximum (peak) values are less relevant as they may occur for only a few minutes or hours each year.

This section describes the levels of EMF associated with the existing transmission line and the rebuilt 230 kV transmission line. EMF levels are provided for both historical (2014) and future (2017) annual average and maximum (peak) loading conditions.

##### **Existing lines – Average historical loading**

EMF levels were calculated for the existing lines at the *historical average* load condition (412 amps for Line #223 and 609 amps for Line #226) and at an operating voltage of 241.5 kV when supported on existing structures – see Attachment II.A.3.a and c.

These field levels are calculated at mid-span where the conductors are closest to the ground and the conductors are at an average historical load operating temperature and at a clearance to mean high water and ground respectively of 46.86 feet and 25.35 feet for Line #223, and 46.72 feet and 25.18 feet for Line #226.

EMF levels at the edge of the rights-of-way for the existing lines at the average historical loading:

	<u>Northern Edge</u>		<u>Southern Edge</u>	
	<u>Electric Field</u> (kV/m)	<u>Magnetic Field</u> (mG)	<u>Electric Field</u> (kV/m)	<u>Magnetic Field</u> (mG)
<u>Attachment II.A.3.a</u>	0.620	20.026	0.0560	6.200
<u>Attachment II.A.3.c</u>	0.775	43.890	0.135	6.731

### Existing lines – Peak historical loading

EMF levels were calculated for the existing lines at the *historical peak* load condition (908 amps for Line #223, and 1021 amps for Line #226) and at an operating voltage of 241.5 kV when supported on existing structures – see Attachment II.A.3.a and c.

These field levels are calculated at mid-span where the conductors are closest to the ground and the conductors are at a peak historical load operating temperature and at a clearance to mean high water and ground respectively of 46.40 feet and 24.80 feet for Line #223, and 46.20 feet and 24.57 feet for Line #226.

EMF levels at the edge of the rights-of-way for the existing lines at the historical peak loading:

	<u>Northern Edge</u>		<u>Southern Edge</u>	
	<u>Electric Field</u> (kV/m)	<u>Magnetic Field</u> (mG)	<u>Electric Field</u> (kV/m)	<u>Magnetic Field</u> (mG)
<u>Attachment II.A.3.a</u>	0.621	33.676	0.058	12.267
<u>Attachment II.A.3.c</u>	0.760	75.339	0.138	14.171

### Proposed Rebuild Project – Average historical loading

EMF levels were calculated for the proposed Rebuild Project at the *historical average* load condition (412 amps for Line #223, and 609 amps for Line #226) and at an operating voltage of 241.5 kV when supported on the proposed Rebuild Project structures – see Attachment II.A.3.b and d.

These field levels are calculated at mid-span where the conductors are closest to the ground and the conductors are at a historical average load operating temperature and at a clearance to mean high water and ground respectively of 46.94 feet and 24.83 feet for Line #223, and 46.86 feet and 24.68 feet for Line #226.

EMF levels at the edge of the rights-of-way for the proposed Rebuild Project at historical average loading:

	<u>Northern Edge</u>		<u>Southern Edge</u>	
	<u>Electric Field</u> (kV/m)	<u>Magnetic Field</u> (mG)	<u>Electric Field</u> (kV/m)	<u>Magnetic Field</u> (mG)
<u>Attachment II.A.3.b</u>	0.048	7.876	0.456	16.186
<u>Attachment II.A.3.d</u>	0.145	9.384	0.257	24.020

### **Proposed Rebuild Project – Peak historical loading**

EMF levels were calculated for the proposed Rebuild Project at the *historical peak* load condition (908 amps for Line #223, and 1021 amps for Line #226) and at an operating voltage of 241.5 kV when supported on the proposed rebuild structures – see Attachment II.A.3.b and d.

These field levels are calculated at mid-span where the conductors are closest to the ground and the conductors are at a peak historical load operating temperature and at a clearance to mean high water and ground respectively of 46.65 feet and 24.38 feet for Line #223, and 46.55 feet and 24.22 feet for Line #226.

EMF levels at the edge of the rights-of-way for the proposed Rebuild Project at historical peak loading:

	<u>Northern Edge</u>		<u>Southern Edge</u>	
	<u>Electric Field</u> (kV/m)	<u>Magnetic Field</u> (mG)	<u>Electric Field</u> (kV/m)	<u>Magnetic Field</u> (mG)
<u>Attachment II.A.3.b</u>	0.049	13.276	0.456	32.554
<u>Attachment II.A.3.d</u>	0.147	15.733	0.253	49.953

### **Proposed Rebuild Project – Projected average loading in 2017**

EMF levels were calculated for the Rebuild Project at the *projected average* load condition (499 amps for Line #223 and 615 amps for Line #226) and at an operating voltage of 241.5 kV when supported on proposed rebuild structures – see Attachment II.A.3.b and d.

These field levels are calculated at mid-span where the conductors are closest to the ground and the conductors are at an average historical load operating temperature and at a clearance to mean high water and ground respectively of 46.86 feet and 24.76 feet for Line #223, and 46.90 feet and 24.64 feet for Line #226.

EMF levels at the edge of the rights-of-way for the proposed Rebuild Project at projected average loading:

	<u>Northern Edge</u>		<u>Southern Edge</u>	
	<u>Electric Field</u> (kV/m)	<u>Magnetic Field</u> (mG)	<u>Electric Field</u> (kV/m)	<u>Magnetic Field</u> (mG)
<u>Attachment II.A.3.b</u>	0.048	7.937	0.456	18.256
<u>Attachment II.A.3.d</u>	0.145	9.430	0.256	27.733

### **Proposed Rebuild Project – Peak loading in 2017**

EMF levels were calculated for the Rebuild Project at the *projected peak* load condition (751 amps for Line #223 and 938 amps for Line #226) and at an operating voltage of 241.5 kV when supported on proposed rebuild structures – see Attachment II.A.3.b and d.

These field levels are calculated at mid-span where the conductors are closest to the ground and the conductors are at an average historical load operating temperature and at a clearance to mean high water and ground respectively of 46.74 feet and 24.56 feet for Line #223, and 46.65 feet and 24.29 feet for Line #226.

EMF levels at the edge of the rights-of-way for the proposed Rebuild Project at projected peak loading:

	<u>Northern Edge</u>		<u>Southern Edge</u>	
	<u>Electric Field</u> (kV/m)	<u>Magnetic Field</u> (mG)	<u>Electric Field</u> (kV/m)	<u>Magnetic Field</u> (mG)
<u>Attachment II.A.3.b</u>	0.049	12.128	0.456	27.720
<u>Attachment II.A.3.d</u>	0.147	14.420	0.255	42.057

#### IV. HEALTH ASPECTS OF EMF

- B. If Company is of the opinion that no significant health effects will result from the construction and operation of the line, describe in detail the reasons for that opinion and provide references or citations to supporting documentation.**

**Response:** The foundation of the Company's opinion is the conclusions of expert panels formed by national and international scientific agencies; each of these panels has evaluated the scientific research related to health and power-frequency EMF and provided conclusions that form the basis of guidance to governments and industries. The Company regularly monitors the recommendations of these expert panels to guide their approach to EMF.

Major reviews on this topic, in order of their most recent publication, include those published by the European Health Risk Assessment Network on Electromagnetic Fields Exposure (EFHRAN),<sup>3</sup> the International Commission on Non-Ionizing Radiation Protection (ICNIRP), the Scientific Committee on Emerging and Newly Identified Health Risks (SCENIHR), the World Health Organization (WHO), and the International Committee on Electromagnetic Safety (ICES) (EFHRAN, 2010; ICNIRP, 2003, 2010; SCENIIR 2007, 2009; WHO, 2007; ICES, 2002).

Research on this topic varies widely in its approach. Some studies evaluate the effects of high EMF exposures not typically found in people's day-to-day lives, while others evaluate the effects of common EMF exposures. The studies evaluate long-term effects (*e.g.*, cancer, neurodegenerative diseases, and reproductive effects) and short-term biological responses. This research includes hundreds of epidemiology studies of people in their natural environment and laboratory studies of animals (*in vivo*) and isolated cells and tissues (*in vitro*). Standard scientific procedures are used by the expert panels to identify, review and summarize this large and diverse research area.

The general scientific consensus of the health agencies reviewing this research is that at levels associated with the operation of the proposed transmission line, or other common sources of EMF in the environment, the research does not support the conclusion that EMF causes any long-term, adverse health effects.

Thus, based on the conclusions of scientific reviews and the levels of EMF associated with the Rebuild Project, the Company has determined that no adverse health effects will result from the operation of the proposed transmission lines.

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<sup>3</sup> EFHRAN is funded by the European Commission's Executive Agency for Health and Consumers.



#### IV. HEALTH ASPECTS OF EMF

**C. Describe any research studies the Company is aware of that meet the following criteria:**

- 1. Became available for consideration since the completion of the Virginia Department of Health's most recent review of studies on EMF and its subsequent report to the Virginia General Assembly in compliance with 1985 Senate Joint Resolution No. 126;**
- 2. Include findings regarding EMF that have not previously been reported and/or provide substantial additional insight into previous findings; and**
- 3. Have been subjected to peer review.**

Response: The Virginia Department of Health's most recent review of studies on EMF was completed in 2000; many peer-reviewed research studies have become available since that time and were reviewed by the scientific organizations discussed above. The WHO recently conducted one of the most comprehensive and detailed reviews, which summarized peer-reviewed research published through early 2006 (WHO, 2007).

Research published in the peer-reviewed literature subsequent to the WHO report has been reviewed by several scientific organizations, all of which support the conclusions of the WHO (2007) report, including:

- The Health Council of the Netherlands (HCN) reviewed new research in 2007.
- SCENIHR, a committee of the European Commission, published their most recent assessment in 2009.
- The Swedish Radiation Protection Authority (SSI) updates their review annually; their most recent review evaluated research through 2007 (SSI, 2008).
- EFHRAN published the most recent review in February 2010.

These reviews can be consulted for commentary on recent studies. In addition, other recent peer-reviewed studies (*e.g.*, Chung et al., 2010; Coble et al., 2009; Kheifets et al., 2010a, 2010b; Kroll *et al.*, 2010; McNamee et al., 2010) provide evidence that clarifies previous findings.

- Chung *et al.* (2010) found no difference in lymphoma rates between cancer-prone mice exposed long-term to strong magnetic fields and an unexposed control group. Mice were exposed 21 hours per day for 40 weeks to magnetic fields up to 5,000 mG, which is hundreds to thousands of times greater than routine residential exposures. This study

is consistent with previous *in vivo* studies that found no evidence that magnetic fields promote the development of lymphoma or leukemia in laboratory animals.

- Coble *et al.* (2009) conducted a case-control study in the United States of brain tumors (gliomas and meningiomas) in U.S. workers. This study was advanced because several different measures were used to assess individual exposure, and exposure duration was incorporated into lifetime magnetic-field exposure. No association was reported between any of the exposure metrics and brain tumors. This study's strengths are its large size and advanced exposure assessment.
- Kheifets *et al.* (2010a) conducted a pooled analysis of epidemiologic studies of childhood brain tumors and magnetic fields to explore the association in the larger pooled population. Ten case-control studies of childhood brain tumors were identified that met the inclusion criteria. No statistically significant associations with brain tumors were found in any of the three exposure levels, compared to average exposure less than 1 mG. A sub-group of five studies with information on calculated or measured magnetic fields greater than 3-4 mG reported a combined odds ratio that was elevated but not statistically significant.
- Kheifets *et al.* (2010b) pooled data from studies of childhood leukemia and magnetic fields to update the previous meta-analyses on this topic published in 2000. The authors identified seven subsequent case-control studies of childhood leukemia that included measured or calculated magnetic field levels. Results showed an overall weak association with leukemia for the highest estimated long-term average exposure level (4 mG or higher) that was slightly elevated, but could not be distinguished from chance. This study confirms a positive association between average magnetic field levels greater than 3 mG and childhood leukemia, but the association could not be distinguished from chance due to small numbers.
- Kroll *et al.* (2010) re-evaluated a previous study in the United Kingdom that had reported childhood leukemia was associated with distance of a child's home at birth from a power line (Draper *et al.*, 2005). Distance is considered a poor estimate of magnetic field exposure; therefore, Kroll *et al.* repeated the study using calculated magnetic field levels from nearby power lines. The results showed a weak, non-significant association between leukemia and the calculated magnetic fields from high-voltage power lines. As a result of small numbers and incomplete information, no strong conclusions can be drawn from this study.
- Recent research by McNamee *et al.* (2010a) examined how acute exposure of human subjects to 60-Hz magnetic fields affected human heart rate, heart rate variability and skin blood perfusion; no effects of

exposure to an 18,000 mG magnetic field on these measures were reported. A similar study by these investigators also reported no effects of these parameters at a lower magnetic field intensity of 2,000 mG (McNamee *et al.*, 2010b).

## References

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Kroll ME, Swanson J, Vincent TJ, Draper GJ. Childhood cancer and magnetic fields from high-voltage power lines in England and Wales: a case-control study. *Br J Cancer* 103:1122-1127, 2010.

McNamee DA, Corbacio M, Weller JK, Brown S, Prato FS, Thomas AW, Legros AG. The cardiovascular response to an acute 1800- $\mu$ T, 60-Hz magnetic field exposure in humans. *Int Arch Occup Environ Health* 83:441-454, 2010a.

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Scientific Committee on Emerging and Newly Identified Health Risks (SCENIHR) for the Directorate-General for Health & Consumers of the European Commission. Health Effects of Exposure to EMF. January 2009.

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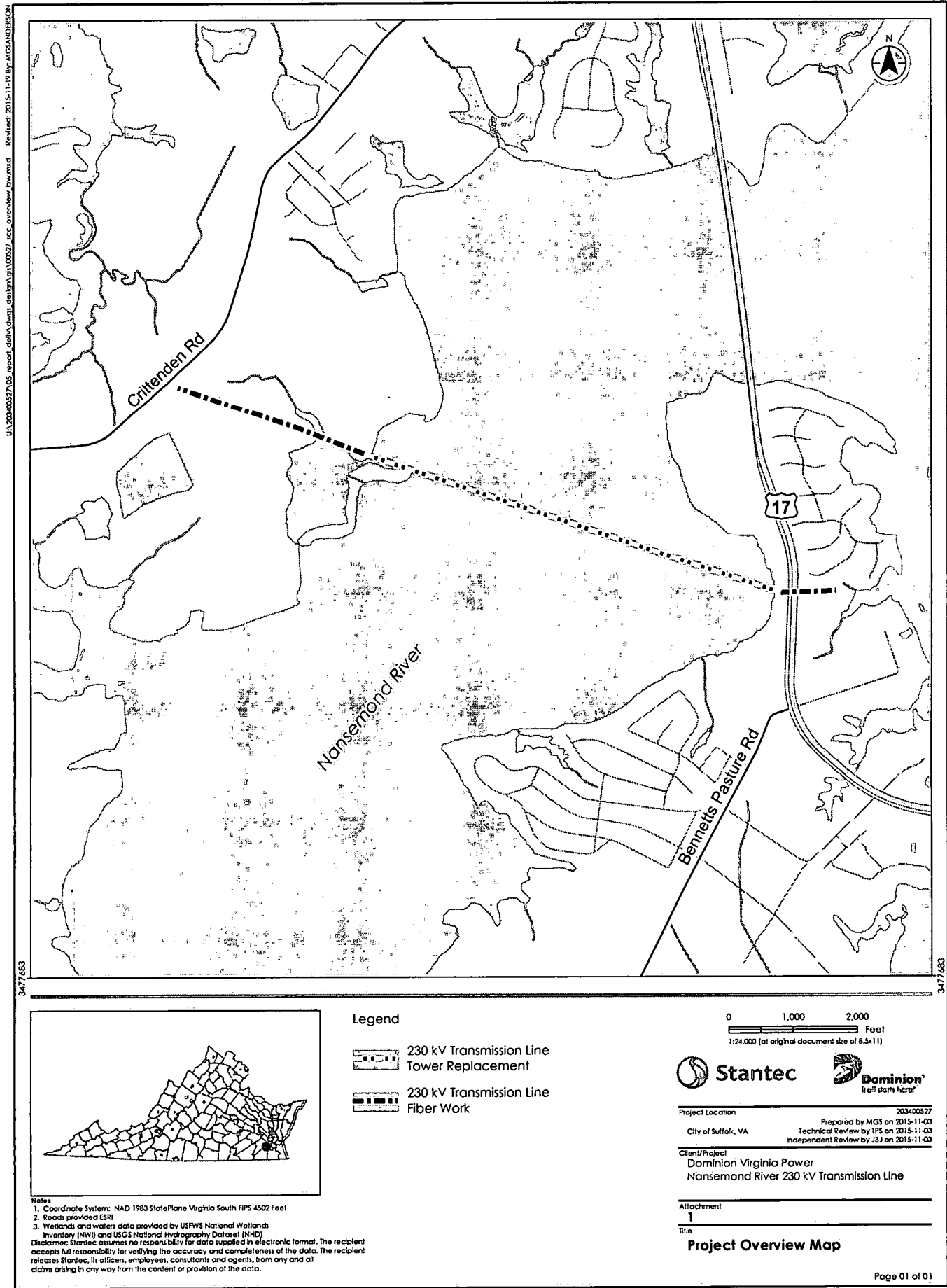
[www.who.int/peh-emf/publications/elf\\_ehc/en/index.html](http://www.who.int/peh-emf/publications/elf_ehc/en/index.html)

## **V. NOTICE**

- A. Furnish a proposed route description to be used for public notice purposes. Provide a map of suitable scale showing the route of the proposed project.**

Response: A map showing the existing route to be used for the Rebuild Project is provided as Attachment V.A. A written description of the route is as follows:

The proposed route for the partial Rebuild Project is the approximately 1.3-mile corridor currently occupied by the existing 230 kV transmission lines. Including the additional 0.7 mile being used in conjunction with the fiber replacement, the Rebuild Project route originates west of Crittenden Road (SR 628) in Suffolk and heads east/south east for approximately 0.6 mile where it crosses the Nansemond River for approximately 1.3 miles. Upon coming ashore on the eastern bank of the Nansemond River, Line #223/226 turns due east and continues for another 0.2 mile, crossing Bridge Road (US 17).



**V. NOTICE**

- B. List Company offices at which members of the public may inspect the application.**

**Response:** The application is available at the following locations:

Dominion Virginia Power  
701 East Cary Street, 12th Floor  
Richmond, Virginia 23219  
Attn: Nadiah Younus, EIT

City of Suffolk  
442 West Washington Street  
Suffolk, Virginia 23434  
Attn: Patrick Roberts, City Manager



**V. NOTICE**

- C. List all federal, state, and local agencies and/or officials who may reasonably be expected to have an interest in the proposed construction and to whom the Company has furnished or will furnish a copy of the application.**

Response: Ms. Bettina Sullivan, Manager [*2 electronic copies*]  
(Via Ms. Valerie Fulcher, Executive Secretary Senior)  
Office of Environmental Impact Review  
Department of Environmental Quality  
629 East Main Street  
Richmond, Virginia 23219

Robbie Rhur [*electronic*]  
Department of Conservation and Recreation  
600 E Main Street, 17<sup>th</sup> floor  
Richmond, Virginia 23219

Ms. Rene Hypes [*electronic*]  
Virginia Natural Heritage Program  
Virginia Department of Conservation and Recreation  
600 East Main Street, 24<sup>th</sup> Floor  
Richmond, Virginia 23219

Ms. Julie Langan, Acting Director [*electronic*]  
Virginia Department of Historic Resources  
2801 Kensington Avenue  
Richmond, Virginia 23221

Ms. Amy M. Ewing [*electronic*]  
Environmental Services Biologist  
Virginia Department of Game and Inland Fisheries  
7870 Villa Park Drive  
Henrico, Virginia 23228

Mr. Keith Tignor  
Endangered Species Coordinator  
Virginia Department of Agriculture and Consumer Affairs  
102 Governor Street  
Richmond, Virginia 23219

Mr. Todd Groh [*electronic*]  
Virginia Department of Forestry  
Fontaine Research Park  
900 Natural Resources Drive, Suite 800  
Charlottesville, Virginia 22903

John Bull, Commissioner  
(Via Ms. Jane McCroskey, Commission Secretary)  
Virginia Marine Resources Commission Main Office  
2600 Washington Avenue, 3<sup>rd</sup> Floor  
Newport News, Virginia 23607

Patrick Roberts, City Manager  
City of Suffolk  
P.O. Box 1858  
Suffolk, VA 23439

David W. Parks  
Suffolk Wetlands Board  
Planning and Community Development  
442 West Washington Street  
Suffolk, Virginia 23434

Karen Mayne, Supervisor  
Virginia Field Office  
US Fish and Wildlife Service  
Ecological Services  
6669 Short Lane  
Gloucester, Virginia 23061

Pete Kube, Eastern Section Chief  
US Army Corps of Engineers  
Norfolk District – Main Office  
803 Front Street  
Norfolk, Virginia 23510

Jim Utterback, District Administrator  
Virginia Department of Transportation  
Hampton Roads District  
1700 North Main Street  
Suffolk, Virginia 23434

Hannah

### **WITNESS DIRECT TESTIMONY SUMMARY**

**Witness:** Kyle D. Hannah

**Title:** Transmission Planning Engineering Manager – Electric Transmission Planning

**Summary:**

In order to maintain the structural integrity and reliability of its transmission system and perform needed maintenance on its existing facilities, Virginia Electric and Power Company (“Dominion Virginia Power” or the “Company”) proposes to rebuild, entirely within existing right-of-way, approximately 1.3 miles of existing double circuit 230 kV transmission lines, Surry-Yadkin Line #223 and Churchland-Surry Line #226, located between Harbour View Substation and Smithfield Substation in Suffolk, Virginia (the “Rebuild Project”).

Company Witness Kyle D. Hannah provides an overview of the Company’s transmission system and transmission planning process, and the transmission facilities in the Rebuild Project that are part of the Company’s 230 kV network in Southeastern Virginia and also provide direct delivery to the customers served out of Smithfield, Harbour View and Crittenden Substations.

The Company plans to remove or replace aging transmission facilities that are reaching the end of their service lives, and thereby enable the Company to maintain the overall long-term reliability of its transmission system.

**DIRECT TESTIMONY  
OF  
KYLE D. HANNAH  
ON BEHALF OF  
VIRGINIA ELECTRIC AND POWER COMPANY  
BEFORE THE  
STATE CORPORATION COMMISSION OF VIRGINIA  
CASE NO. PUE-2016-00003**

1   **Q.   Please state your name, business address and position with Virginia Electric**  
2       **and Power Company (“Dominion Virginia Power” or the “Company”).**

3   A.   My name is Kyle D. Hannah, and I am a Transmission Planning Engineering  
4       Manager in the Electric Transmission Planning Department of Dominion Virginia  
5       Power. My office is located at One James River Plaza, 701 East Cary Street,  
6       Richmond, Virginia 23219.

7   **Q.   What is your educational and professional background?**

8   A.   I am a 2003 graduate of The Georgia Institute of Technology with a Bachelor’s  
9       Degree in Electrical Engineering and a 2014 graduate of Virginia Commonwealth  
10      University with a Masters of Business Administration Degree. I also am a  
11      Registered Professional Engineer with the Commonwealth of Virginia (No. 0402  
12      046997).

13      My experience with the Company includes System Protection, Transmission  
14      Operations and Transmission Planning. I started with the Company in March  
15      2004 as an Engineer I in the System Protection Group where my primary  
16      responsibilities were to calculate relay settings and configure protective relaying  
17      schemes for all electric transmission equipment. In March 2007, I was promoted  
18      to an Engineer II and transferred to the Transmission Operations Group where I

1 worked as a reliability engineer in the System Operations Center (“SOC”). In the  
2 SOC my primary responsibilities were to monitor the real-time status of the  
3 electric transmission system, execute switching studies and perform contingency  
4 analyses to ensure reliable operation of the bulk electric system. In September  
5 2008, I moved to the Transmission Planning Group where I was responsible for  
6 planning the Company’s electric transmission system for voltages 69 kV through  
7 500 kV. During my tenure in the Transmission Planning Group, I was promoted  
8 to an Engineer III. In December 2013, I was promoted to Supervisor Substation  
9 Engineering where I supervised the system protection and control design group. I  
10 was transferred in September 2015 to my present position as the Transmission  
11 Planning Engineering Manager.

12 **Q. Please describe your areas of responsibility with the Company.**

13 A. I am responsible for planning the Company’s electric transmission system for  
14 voltages 69 kV through 500 kV.

15 **Q. What is the purpose of your testimony in this proceeding?**

16 A. In order to maintain the structural integrity and reliability of its transmission  
17 system and perform needed maintenance on its existing facilities, Dominion  
18 Virginia Power proposes to rebuild, entirely within existing right-of-way,  
19 approximately 1.3 miles of existing double circuit 230 kV transmission lines,  
20 Surry-Yadkin Line #223 and Churchland-Surry Line #226, located between  
21 Harbour View Substation and Smithfield Substation in Suffolk, Virginia (the  
22 “Rebuild Project”).

1 My prefiled direct testimony will discuss the need for, and benefits of, the  
2 proposed Rebuild Project. I am also sponsoring Sections I.A through I.C and I.E,  
3 I.F, I.H and I.I of the Appendix and co-sponsoring Section I.A with Company  
4 Witness Elizabeth Kricorian.

5 **Q. Please provide an overview of the Company's transmission system and**  
6 **transmission planning process.**

7 A. Dominion Virginia Power's transmission system is responsible for providing  
8 transmission service to the Company's retail customers and also to Appalachian  
9 Power Company (APCo), Old Dominion Electric Cooperative (ODEC), Northern  
10 Virginia Electric Cooperative (NOVEC), Central Virginia Electric Cooperative  
11 (CVEC), and Virginia Municipal Electric Association (VMEA) for redelivery to  
12 their retail customers in Virginia, as well as to North Carolina Electric  
13 Membership Corporation (NCEMC) and North Carolina Eastern Municipal Power  
14 Agency (NCEMPA) for redelivery to their customers in North Carolina. The  
15 Company needs to be able to maintain the overall, long-term reliability of its  
16 transmission system, as its customers require more power in the future.

17 Dominion Virginia Power is part of the Eastern Interconnection transmission grid,  
18 meaning it is interconnected, directly or indirectly, with all of the other  
19 transmission systems in the U.S. and Canada between the Rocky Mountains and  
20 the Atlantic coast, except Quebec and most of Texas. All of the transmission  
21 systems in the Eastern Interconnection are dependent on each other for support in  
22 moving bulk power through the transmission system and for reliability support.



1 Dominion Virginia Power's service to its customers is extremely reliant on a  
2 robust and reliable regional transmission system.

3 Dominion Virginia Power also is part of the PJM Interconnection L.L.C. ("PJM")  
4 regional transmission organization (RTO) providing service to a large portion of  
5 the eastern United States. PJM is currently responsible for ensuring the reliability  
6 and coordinating the movement of electricity through all or parts of Delaware,  
7 Illinois, Indiana, Kentucky, Maryland, Michigan, New Jersey, North Carolina,  
8 Ohio, Pennsylvania, Tennessee, Virginia, West Virginia and the District of  
9 Columbia. This service area has a population of about 60 million and on July 21,  
10 2011, set a record high of 158,450 MW for summer peak demand, of which  
11 Dominion Virginia Power's load portion was approximately 19,636 MW serving  
12 2.4 million customers. On July 22, 2011, the Company set a record high of  
13 20,061 MW for summer peak demand. On February 20, 2015, the Company set a  
14 winter and all-time record demand of 21,651 MW. Moreover, based on the 2015  
15 PJM Load Forecast, the Dominion Zone is expected to be one of the fastest  
16 growing zones in PJM with an average growth rate of 1.7% over the next 10 years  
17 compared to the PJM average of 1.0% over the same period.

18 **Q. Please describe the present transmission system in the vicinity of the**  
19 **proposed Rebuild Project.**

20 A. Existing Surry-Yadkin Line #223 and Churchland-Surry Line #226 are part of the  
21 Company's 230 kV network. Line #223 and Line #226 interconnect at Surry  
22 Substation with the Company's 1,676 MW Surry Power Station generation  
23 facility and multiple 500 kV lines and 230 kV lines. Line #223 and Line #226 are

1 two of three primary 230 kV sources to deliver power reliably to the Virginia  
2 Beach and Suffolk area. These two lines provide direct delivery to the customers  
3 served out of Smithfield, Harbour View and Crittenden Substations. These  
4 substations serve over 23,000 customers, including approximately 2,200  
5 Community Electric Cooperative customers.

6 **Q. Why do the proposed facilities need to be built at this time?**

7 A. The Rebuild Project will meet an immediate operational need by replacing aging  
8 transmission facilities. Specifically, the Rebuild Project provides the benefit of  
9 removing or replacing aging transmission facilities that are reaching the end of  
10 their service lives. The foundations of the five towers in the river have critical  
11 structural deficiencies that cannot be repaired. Further, all seven of the 230 kV  
12 towers and hardware are approaching 50 years old. As a natural course of  
13 advanced aging, the towers exhibit almost complete loss of galvanizing and are  
14 beginning to rust; pitting can be seen in some areas of the five river crossing  
15 towers, which indicates that the steel is losing thickness thereby weakening the  
16 structure; and the associated hardware is severely corroded and insulators are  
17 flashed.

18 Additionally, the Rebuild Project is necessary to assure that Dominion Virginia  
19 Power can continue to provide reliable electric service to customers consistent  
20 with the Company's obligation under Virginia law.

1   **Q.    Did the Company consider whether there are feasible alternatives to**  
2   **construction of the proposed transmission facilities?**

3   A.    The 230 kV Surry-Yadkin Line #223 and Churchland-Surry Line #226 play an  
4   important role in the reliable operation of the Company's electric transmission  
5   system. As detailed in Section I.A of the Appendix, the Company has recognized  
6   that the river crossing section of Line #223 and Line #226 is approaching the end  
7   of its service life. Because the existing corridor is adequate to construct the  
8   proposed Rebuild Project, no permanent new real estate rights are needed;  
9   therefore, any alternative to this Rebuild Project requiring the addition of new 230  
10   kV facilities in new rights-of-way at significant expense was not considered.

11       An alternative to the Rebuild Project that the Company considered and rejected  
12   was to rebuild this river crossing section of Line #223 and Line #226 with  
13   underground lines ("underground alternative"). This underground alternative is  
14   estimated to cost \$189 million, which is approximately \$170 million more than  
15   the cost of the proposed Rebuild Project. In addition, the projected construction  
16   time of the proposed Rebuild Project is estimated to be nine months (with an  
17   additional three months for removal of existing lattice structures and foundations  
18   in the river), and the projected construction time of the underground alternative is  
19   estimated to be 18-26 months. Additionally, the underground alternative would  
20   require the construction of a transition station on each side of the river where the  
21   line transitions from underground to overhead. The Company would have to  
22   purchase the property (approximately 1.0 to 1.5 acres), and also allow additional  
23   time for issues associated with siting, construction and permitting of the station.  
24   Due to the significantly greater costs, environmental impacts, and added

1 construction time, particularly given the immediate need to replace the existing  
2 structures, this alternative was rejected.

3 **Q. Have you reviewed the demand-side resources incorporated in the**  
4 **Company's planning studies used in support of this application, as directed**  
5 **by the Commission in its Order issued on November 26, 2013 in Case No.**  
6 **PUE-2012-00029?**

7 A. No, not for the proposed Rebuild Project. The need for this project is not based  
8 on the planning studies of the Company or PJM but rather aging infrastructure.

9 **Q. Does this conclude your prefiled direct testimony?**

10 A. Yes, it does.



### **WITNESS DIRECT TESTIMONY SUMMARY**

**Witness:** Elizabeth Kricorian

**Title:** Engineer III - Electric Transmission Line Engineering

**Summary:**

In order to maintain the structural integrity and reliability of its transmission system and perform needed maintenance on its existing facilities, Virginia Electric and Power Company (“Dominion Virginia Power” or the “Company”) proposes to rebuild, entirely within existing right-of-way, approximately 1.3 miles of existing double circuit 230 kV transmission lines, Surry-Yadkin Line #223 and Churchland-Surry Line #226, located between Harbour View Substation and Smithfield Substation in Suffolk, Virginia (the “Rebuild Project”).

Company Witness Elizabeth Kricorian provides an overview of the design of the transmission line components of the proposed electric transmission facilities from a transmission line engineering perspective.

Through the proposed Rebuild Project, the Company plans to remove and replace aging transmission facilities that are reaching the end of their service lives, and thereby enable the Company to maintain the overall long-term reliability of its transmission system. The Company proposes to replace a total of seven 230 kV double circuit structures, including five existing towers located in the Nansemond River, that support existing Lines #223 and #226.

The estimated cost for the Rebuild Project, which is scheduled for completion in early 2017, is approximately \$19.2 million.

**DIRECT TESTIMONY  
OF  
ELIZABETH KRICORIAN  
ON BEHALF OF  
VIRGINIA ELECTRIC AND POWER COMPANY  
BEFORE THE  
STATE CORPORATION COMMISSION OF VIRGINIA  
CASE NO. PUE-2016-00003**

1   **Q.    Please state your name and position with Virginia Electric and Power Company**  
2           **(“Dominion Virginia Power” or the “Company”).**

3   A.    My name is Elizabeth Kricorian, and I am an Engineer III in the Electric  
4           Transmission Line Engineering Department of the Company. My business address is  
5           One James River Plaza, 701 East Cary Street, Richmond, Virginia 23219.

6   **Q.    What is your educational and professional background?**

7   A.    I received a Bachelor of Science degree in Engineering Science and Mechanics from  
8           Virginia Polytechnic Institute and State University in 2003. From December 2003 –  
9           November 2009, I held various engineering titles at CHA Inc. (formerly Clough  
10          Harbour and Associates, LLP). Since June 2010, I have held various engineering  
11          titles with the Company in the Electric Transmission Engineering department.

12   **Q.    Please describe your areas of responsibility with the Company.**

13   A.    I am responsible for the estimating and preliminary engineering design on high  
14          voltage transmission line projects from 69 kV to 500 kV.

15   **Q.    What is the purpose of your testimony in this proceeding?**

16   A.    In order to maintain the structural integrity and reliability of its transmission system  
17          and perform needed maintenance on its existing facilities, Dominion Virginia Power

1 proposes to rebuild, entirely within existing right-of-way, approximately 1.3 miles of  
2 existing double circuit 230 kV transmission lines, Surry-Yadkin Line #223 and  
3 Churchland-Surry Line #226, located between Harbour View Substation and  
4 Smithfield Substation in Suffolk, Virginia (the “Rebuild Project”).

5 I will describe the design characteristics of the transmission line proposed in the  
6 Application, and I will provide electric and magnetic field (“EMF”) data for the  
7 proposed facilities. I am sponsoring Sections I.D, I.F, I.G, II.A.3, II.A.6, II.B and IV  
8 of the Appendix. I am also co-sponsoring Section I.A with Company Witness Kyle  
9 Hannah.

10 **Q. What are the transmission engineering considerations driving the need for the**  
11 **Rebuild Project?**

12 A. The Rebuild Project will replace aging transmission facilities that are reaching the  
13 end of their useful life. Specifically, the foundations of the five towers in the river  
14 have critical structural deficiencies that cannot be repaired. Further, all seven of the  
15 230 kV towers and hardware are approaching 50 years old. As a natural course of  
16 advanced aging, the towers exhibit almost complete loss of galvanizing and are  
17 beginning to rust; pitting can be seen in some areas of the five river crossing towers,  
18 which indicates that the steel is losing thickness thereby weakening the structure; and  
19 the associated hardware is severely corroded and insulators are flashed.

20 The inspection report from Crofton Industries based on inspections performed in  
21 2014 and included as Attachment I.A.2 to the Appendix illustrates the extensive  
22 deterioration of the steel and concrete foundations. The steel H-piles exhibit severe



1 section loss, including holes in some flanges and thickness loss approaching 50%.  
2 The strength of these steel H-piles is structurally compromised. The concrete pile  
3 caps of these foundations also exhibit significant deterioration, including severe  
4 horizontal and vertical cracking at the bottom portion of the concrete cap with  
5 evidence of rust staining. Rust staining indicates that the steel reinforcing inside the  
6 concrete is exposed to water and actively corroding. In some cases, concrete spalling  
7 has occurred well above the cap bottom, and exposed the flange surface of the steel  
8 H-piles and the steel reinforcement. This deterioration of the bottoms of the concrete  
9 caps allows brackish water infiltration into the concrete, promoting further internal  
10 corrosion of the H-piles and steel reinforcement.

11 The concrete and steel deterioration in the bottom section of the pile cap constitutes  
12 an identified threat to the integrity of the foundation system because this is the zone  
13 of load transfer between steel H-pile and concrete cap. The Company has determined  
14 that there is no way to safely rehabilitate these structures; therefore, replacement is  
15 the only option.

16 **Q. Please describe the design of the transmission lines for the proposed Rebuild**  
17 **Project.**

18 A. For the Rebuild Project, the Company proposes to replace five existing 230 kV  
19 double circuit suspension-type lattice towers located in the Nansemond River that  
20 support Lines #223 and #226. The existing structures are galvanized steel and were  
21 originally constructed in the late 1960s. The five replacement structures will be  
22 located approximately 60 feet south of the existing structures, centerline to centerline.  
23 One 230 kV double circuit, weathering steel, double deadend type tower on each

1 bank of the Nansemond River will also be removed and replaced with a galvanized  
2 steel, double deadend type monopole. The monopole structure will be located  
3 approximately 60 feet south of the existing structures on each riverbank, resulting in a  
4 total of the replacement of seven existing structures with seven new structures. In  
5 addition to the structure replacement, the Company also proposes to replace 1.3 miles  
6 of the existing three-phased 721 (18/19) ACAR twin-bundled conductors of Line  
7 #223 and #226 with 1.3 miles of three-phased 768 ACSS/TW/HS-285 (20/7) twin-  
8 bundled conductors. One span of existing three-phased 721 (18/19) ACAR twin-  
9 bundled conductors will be transferred to each proposed riverbank structure. The  
10 transferred conductor will be mechanically spliced to the proposed conductor to  
11 energize the two 230 kV lines.

12 In coordination with the Rebuild Project, the Company will also replace the existing  
13 shield wire. The existing 3#6 shield wire located above Line #223 between the  
14 existing weathering steel double deadend towers on each riverbank will be replaced  
15 with 7#7 shield wire. The 7#7 shield wire will be mechanically spliced with the  
16 existing 3#6 shield wire transferred to each proposed riverbank structure. The existing  
17 fiber optic shield wire located above Line #226 will be replaced between the existing  
18 splice points located on the existing weathering steel double deadend tower located  
19 on the east bank of the Nansemond River (which will ultimately be transferred to the  
20 new east bank monopole structure) and the existing weathering steel double deadend  
21 tower located approximately 0.6 mile west of the west bank of the Nansemond River  
22 at Crittenden Road.

23 **Q. Why were the proposed structures chosen?**

1 A. The proposed structure types selected for installation in the river are in the same  
2 family of lattice structures as the existing structures. The use of lattice structures is  
3 the first choice to support double circuit 230 kV transmission in a river crossing,  
4 because the foundations can be efficiently designed and minimize the impact to the  
5 river bottom. The Company also considered the minimum clearances previously  
6 authorized by the United States Army Corps of Engineers, while attempting to  
7 reasonably minimize the visual impact to the crossing.

8 For the purpose of constructability and to allow the rebuild of the existing 230 kV  
9 double circuit lines in the existing right-of-way as the relocated line makes landfall  
10 and turns back to the existing lattice structures, the proposed land structures will be  
11 engineered double circuit single shaft poles.

12 **Q. What is the estimated construction cost for the proposed Rebuild Project?**

13 A. The estimated total cost for the Rebuild Project, which assumes completion by early  
14 2017, is approximately \$19.2 million. All costs are in 2015 dollars. There is no  
15 station work associated with the Rebuild Project.

16 **Q. Could there be additional costs associated with the Rebuild Project?**

17 A. Yes. This total estimated cost does not include costs associated with relocating the  
18 existing underground distribution line located on the southernmost side of the existing  
19 corridor, if needed to facilitate installation of the Rebuild Project. The cost associated  
20 with relocating the existing underground distribution line is estimated to be  
21 approximately \$1.5 million.

22 **Q. How long will it take to construct the proposed Rebuild Project?**

1 A. If the Company can obtain Commission authorization by June 2016 and schedule the  
2 necessary outages, then the Company anticipates that the Rebuild Project could be in  
3 service by early 2017.

4 The estimated construction time for this Rebuild Project is 12 months, including three  
5 months for removal of the existing lattice structures and the existing foundations in  
6 the Nansemond River. A period of five months will be needed for engineering,  
7 material procurement and construction permitting.

8 **Q. Have you made calculations of the EMF for the proposed lines?**

9 A. Yes, and they are shown in Section IV.A of the Appendix for various loading  
10 conditions expected to occur at the edges of the right-of-way. Magnetic field levels  
11 ranging from 6.200 milligauss (“mG”) to 75.339 mG were calculated for existing  
12 lines at the edges of the right-of-way based on historical average and peak loading. In  
13 comparison, magnetic field levels ranging from 7.937 mG to 42.057 mG were  
14 calculated for the proposed Rebuild Project at the edges of the right-of-way based on  
15 average and peak loading expected to occur in 2017 with the Rebuild Project in  
16 service.

17 **Q. The information you have provided in Section IV.A of the Appendix shows the**  
18 **calculated maximum EMF at the edge of the rights-of-way. How do the**  
19 **strengths of the maximum magnetic fields at the edge of the right-of-way**  
20 **compare to magnetic fields found elsewhere?**

21 A. The field strengths shown in Appendix Section IV.A can be compared to those  
22 created by other electrical sources. For example, a hair dryer produces 300 mG or

1 more, a copy machine can produce 90 mG or more, and an electric power saw can  
2 produce 40 mG or more, depending on the circumstances and operation of these  
3 devices. The strength of the field received by the person operating these devices  
4 would, of course, depend on the distance between the device and the person operating  
5 it. Magnetic field strength diminishes rapidly as distance from the source increases.  
6 The decrease is proportional to the inverse square of the distance. For example, a  
7 hypothetical magnetic field strength of 10 mG at the edge of the right-of-way  
8 (defined as 50 feet from the centerline) would decrease to 2.5 mG at a point 50 feet  
9 outside of the right-of-way.

10 **Q. Does this conclude your prefiled direct testimony?**

11 **A.** Yes, it does.



## **WITNESS DIRECT TESTIMONY SUMMARY**

**Witness:** Nadiah F. Younus

**Title:** Engineer II – Electric Transmission Planning

**Summary:**

In order to maintain the structural integrity and reliability of its transmission system and perform needed maintenance on its existing facilities, Virginia Electric and Power Company (“Dominion Virginia Power” or the “Company”) proposes to rebuild, entirely within existing right-of-way, approximately 1.3 miles of existing double circuit 230 kV transmission lines, Surry-Yadkin Line #223 and Churchland-Surry Line #226, located between Harbour View Substation and Smithfield Substation in Suffolk, Virginia (the “Rebuild Project”).

Company Witness Nadiah Younus supports the routing evaluation undertaken for the proposed Rebuild Project and provides a description of the permitting required. In addition, Company Witness Younus addresses the Company’s public outreach activities for the Rebuild Project and sponsors the DEQ Supplement.

As Company Witness Younus discusses, because the existing right-of-way is adequate to construct the proposed Rebuild Project, no new right-of-way is necessary. By using the existing right-of-way for its entire length, the Rebuild Project is expected to have minimal impact on area resources. Given the availability of existing right-of-way and the statutory preference given to the use of existing rights-of-way, and because additional costs and environmental impacts would be associated with the acquisition and construction of new right-of-way, the Company did not consider any alternate routes for this Rebuild Project

The Company consulted with local, state and federal agencies to evaluate environmental, historical, scenic, cultural and architectural constraints existing in the vicinity of the Project.

**DIRECT TESTIMONY  
OF  
NADIAH F. YOUNUS  
ON BEHALF OF  
VIRGINIA ELECTRIC AND POWER COMPANY  
BEFORE THE  
STATE CORPORATION COMMISSION OF VIRGINIA  
CASE NO. PUE-2016-00003**

1   **Q.    Please state your name and position with Virginia Electric and Power Company**  
2       **(“Dominion Virginia Power” or “Company”).**

3   **A.    My name is Nadiah F. Younus and I am an Engineer II in the Electric Transmission**  
4       **Planning Department of Dominion Virginia Power. My office is located at One James**  
5       **River Plaza, 701 East Cary Street, Richmond, Virginia 23219.**

6   **Q.    What is your educational and professional background?**

7   **A.    I graduated from Virginia Polytechnic Institute in 2012 with a Bachelor of Science in**  
8       **Civil Engineering. I joined Dominion Virginia Power in June of 2012 and have been**  
9       **with the Company since.**

10   **Q.    What are your responsibilities as Engineer II?**

11   **A.    My responsibilities include identification of appropriate routes for transmission lines and**  
12       **obtaining necessary federal, state, and local approvals, and environmental permits for**  
13       **those facilities. In this position, I work closely with government officials, permitting**  
14       **agencies, property owners, and other interested parties, as well as with other Company**  
15       **personnel, to develop facilities needed by the public so as to reasonably minimize**  
16       **environmental and other impacts on the public in a reliable, cost-effective manner.**



1 **Q. What is the purpose of your testimony in this proceeding?**

2 A. In order to maintain the structural integrity and reliability of its transmission system and  
3 perform needed maintenance on its existing facilities, Dominion Virginia Power proposes  
4 to rebuild, entirely within existing right-of-way, approximately 1.3 miles of existing  
5 double circuit 230 kV transmission lines, Surry-Yadkin Line #223 and Churchland-Surry  
6 Line #226, located between Harbour View Substation and Smithfield Substation in  
7 Suffolk, Virginia (the "Rebuild Project").

8 I will discuss the route for the Rebuild Project presented in Appendix Attachment II.A.2.  
9 In addition, I am sponsoring Sections II.A.1, 2, 4, 5, and 7-9; III and V of the Appendix,  
10 and the DEQ Supplement.

11 **Q. Please provide a description of the existing right-of-way to be used for the Rebuild**  
12 **Project.**

13 A. The entirety of the approximately 1.3-mile long transmission line corridor in the City of  
14 Suffolk contains an existing transmission line right-of-way, inclusive of easements  
15 located in the Nansemond River, for 230 kV Surry-Yadkin Line #223 and Churchland-  
16 Surry Line #226 transmission lines. The existing transmission line corridor is 175 feet  
17 wide. Most of the easement for this right-of-way was acquired in the late 1960s.

18 **Q. What are the environmental impacts of the Rebuild Project?**

19 A. By using existing right-of-way for its entire length, the Rebuild Project is expected to  
20 have minimal impact on area resources.

21 The Rebuild Project crosses an area that is largely characterized by rural to low density  
22 residential land use.

1 According to United States Geological Survey (“USGS”) topographic maps, the Rebuild  
2 Project area is within an existing cleared right-of-way with gently sloping to moderately  
3 sloping terrain. Furthermore, the Nansemond River, Bennett Creek, and tidal wetlands  
4 are mapped within the Rebuild Project limits. According to the National Wetlands  
5 Inventory (“NWI”) map, estuarine and emergent wetlands and estuarine and marine  
6 deepwater are located within the Rebuild Project limits. The Rebuild Project will not  
7 cross any scenic byways.

8 **Q. Did the Company consider any alternate routes for the Rebuild Project?**

9 A. The Company is proposing to rebuild a portion of an existing double circuit line. The  
10 existing corridor is adequate to construct the proposed Rebuild Project and no new right-  
11 of-way is necessary. Given the availability of existing right-of-way and the statutory  
12 preference given to the use of existing rights-of-way, and because additional costs and  
13 environmental impacts would be associated with the acquisition and construction of new  
14 right-of-way, the Company did not consider any alternative routes requiring the addition  
15 of new 230 kV facilities in new rights-of-way for this Rebuild Project. The Company did  
16 consider and reject an underground alternative, as discussed in Section I.C of the  
17 Appendix.

18 **Q. Please discuss the resources in the project area and the activities that have been and**  
19 **will be undertaken to reasonably minimize adverse impacts of the proposed lines on**  
20 **the environment.**

21 A. Wetlands and other Waters of the United States (“WOUS”) within the Rebuild Project  
22 area were delineated by Stantec in accordance with the method outlined in the 1987  
23 Corps of Engineers Wetlands Delineation Manual, and the 2010 Regional Supplement to

1 the Corps of Engineers Wetland Delineation Manual: Atlantic and Gulf Coastal Plain  
2 (Version 2.0). Wetland flags were placed in the field and sequentially numbered to  
3 provide an on-site record of the delineation. In total, approximately 1.64 acres of  
4 palustrine emergent wetlands, 6.53 acres of estuarine emergent wetlands and  
5 approximately 2,137 linear feet (24.5 acres) of the Nansemond River were identified  
6 within the Rebuild Project area. The Corps provided a preliminary jurisdictional  
7 determination confirming the presence of these features on October 20, 2015. This  
8 determination and a copy of the wetland Delineation Map are included as Attachment  
9 2.D.1 of the DEQ Supplement.

10 In accordance with the *Guidelines for Assessing Impacts of Proposed Transmission Lines*  
11 *and Associated Facilities on Historic Resources in the Commonwealth of Virginia*  
12 *(2008)*, a Stage I pre-application analysis was conducted by Stantec. This report is  
13 included as Attachment 2.H.1 to the DEQ Supplement. The report includes the results of  
14 background research Stantec conducted to identify previously recorded cultural resources  
15 within the tiered study areas identified in the Virginia Department of Historic Resources  
16 (“DHR”) guidelines. The background archival research did not find any National Historic  
17 Landmark (“NHL”) listed resources within the 1.5-mile buffer, nor any resources listed  
18 on the National Register of Historic Places (“NRHP”), battlefields or historic landscapes  
19 within the 1-mile buffer. A single eligible resource was found within the 0.5-mile buffer  
20 and is the Town Point Farm (DHR #133-0242). Town Point Farm is located  
21 approximately 0.3 mile from the Rebuild Project. Because the proposed Rebuild Project  
22 is consistent with the transmission line which is currently in place, the analysis

recommended that the Rebuild Project would only have a minimal visual effect to Town Point Farm (DHR #133-0242).

In addition, research indicates that a portion of the Captain John Smith Chesapeake National Historic Trail (or “Trail”) is crossed at the Nansemond River by the Rebuild Project. While not a traditionally documented historic resource, the Trail has been identified recently as a potential historic resource and is therefore noted here and considered as part of this assessment. Because the proposed Rebuild Project is consistent with the transmission lines which are currently in place, the analysis recommended that the Rebuild Project would have a minimal visual effect to the Captain John Smith Chesapeake National Historic Trail.

Online database searches for threatened and endangered species were completed by Stantec for the Rebuild Project. The search included the U.S. Fish and Wildlife Service Information, Planning, and Conservation system, the Virginia Department of Game and Inland Fisheries Virginia Fish and Wildlife Information Service, the Virginia Department of Conservation and Recreation Natural Heritage Resources Database, and the Center for Conservation Biology Bald Eagle Nest Locator for Virginia. The results identified several listed species that have the potential to occur within the vicinity of the Rebuild Project. These resources are identified in the report included as Attachment 2.F.1 of the DEQ Supplement. The Company intends to minimize any impact on these resources and coordinate with the U.S. Fish and Wildlife Service and the Virginia Department of Game and Inland Fisheries as appropriate.

1 **Q. What activities have been or will be undertaken to reasonably minimize the**  
2 **environmental impact of the proposed line, and describe the environmental**  
3 **permitting process that will follow Commission approval of the Rebuild Project?**

4 A. DEQ will conduct an environmental and permitting review of the Company's application,  
5 including the solicitation of comments from relevant agencies. The Company developed  
6 the DEQ Supplement that is attached to this application based on previous Company  
7 coordination with the DEQ. The DEQ Supplement contains, in addition to a brief  
8 description of the Rebuild Project, information on impacts and the status of agency  
9 review with respect to the following: air quality; water withdrawals and discharges;  
10 wetlands; solid and hazardous waste; natural heritage and endangered species; erosion  
11 and sediment control; archeological, historic, scenic, cultural and architectural resources;  
12 use of pesticides and herbicides; geology and mineral resources; wildlife resources;  
13 recreation, agricultural and forest resources; and transportation infrastructure. The  
14 Rebuild Project is located entirely on existing right-of-way so impacts will be reasonably  
15 minimized. The appropriate environmental studies will be made of these areas before  
16 construction begins. Clearing and maintenance of the right-of-way will be done in such a  
17 manner that low buffers of vegetation will be retained as much as possible. The DEQ  
18 Supplement also discusses the permits that will be required and comment letters and  
19 other materials the Company has obtained regarding the Rebuild Project from relevant  
20 agencies as a result of its own efforts.

21 **Q. When will the Company apply for the required permits?**

22 A. After approval by the Commission, the Company will survey the existing right-of-way  
23 and then perform the necessary environmental surveys (wetlands, cultural resources and

1 rare species). After these surveys are complete, applications to the Corps, Virginia  
2 Marine Resources Commission, DEQ and the Virginia Department of Transportation will  
3 be submitted.

4 **Q. Please describe the Company's public outreach regarding the Rebuild Project.**

5 A. In December 2015 and January 2016 the Company met with a number of local and state  
6 officials and property owners in the Suffolk area about the Rebuild Project.

7 Letters were sent to more than 200 property owners inviting them to attend a community  
8 open house on Thursday, January 7, 2016 in Suffolk to share specific details relating to  
9 construction and the SCC process, as well as answer any questions concerning the  
10 Rebuild Project. Eleven people attended the open house.

11 In addition to the letters, advertisements for the open house were placed in The Sun and  
12 the Suffolk News-Herald prior to the event.

13 Additional information is provided to the public through an internet website dedicated to  
14 the Rebuild Project:

15 [www.dom.com/corporate/what-we-do/electricity/transmission-lines-and-projects/](http://www.dom.com/corporate/what-we-do/electricity/transmission-lines-and-projects/nansemond-river-crossing)  
16 [nansemond-river-crossing](http://www.dom.com/corporate/what-we-do/electricity/transmission-lines-and-projects/nansemond-river-crossing)  
17

18 The website includes route maps, an explanation of need, a description of the Rebuild  
19 Project and its benefits, information on the Commission review process, structure  
20 diagrams and answers to frequently asked questions. The letter and the factsheet advised  
21 readers to visit [www.dom.com](http://www.dom.com) and enter the search term "Nansemond River" for more  
22 information regarding the Rebuild Project.

1   **Q.     Has the Company complied with Va. Code § 15.2-2202 D?**

2   A.     Yes. In accordance with Va. Code § 15.2-2202 D, a letter dated December 15, 2015  
3           (included as Appendix Attachment III.B.1), was delivered to Suffolk City Manager  
4           Patrick Roberts advising him of the Company's intention to file this application and  
5           inviting the City to consult with the Company about the Rebuild Project.

6   **Q.     Does this conclude your pre-filed direct testimony?**

7   A.     Yes, it does.

**DEQ Supplement**



BEFORE THE  
STATE CORPORATION COMMISSION  
OF VIRGINIA

APPLICATION OF  
VIRGINIA ELECTRIC AND POWER COMPANY  
FOR APPROVAL OF ELECTRIC FACILITIES

Nansemond River Crossing Double Circuit 230 kV  
Lines #223 and #226 Transmission Line Rebuild

Application No. 275

**DEQ Supplement**

Case No. PUE-2016-00003

Filed: January 20, 2016

Based upon consultations with the Virginia Department of Environmental Quality (“DEQ”), Virginia Electric and Power Company (“Dominion Virginia Power” or the “Company”) has developed this DEQ Supplement to facilitate review and analysis of the proposed Rebuild Project by DEQ and other relevant agencies.

BEFORE THE  
STATE CORPORATION COMMISSION  
OF VIRGINIA

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## Table of Contents

	Page
1. Project Description .....	1
2. Environmental Analysis .....	1
A. Air Quality .....	1
B. Water Source .....	1
C. Discharge of Cooling Waters.....	2
D. Tidal and Non-tidal Wetlands.....	2
E. Solid and Hazardous Waste .....	3
F. Natural Heritage, Threatened and Endangered Species.....	3
G. Erosion and Sediment Control.....	5
H. Archaeological, Historic, Scenic, Cultural or Architectural Resources.....	5
I. Chesapeake Bay Preservation Areas.....	6
J. Wildlife Resources.....	6
K. Recreation, Agricultural and Forest Resources .....	6
L. Use of Pesticides and Herbicides.....	7
M. Geology and Mineral Resources.....	8
N. Transportation Infrastructure .....	8

Based upon consultations with the Virginia Department of Environmental Quality (“DEQ”), Virginia Electric and Power Company (“Dominion Virginia Power” or the “Company”) has developed this DEQ Supplement to facilitate review and analysis of the proposed Rebuild Project by DEQ and other relevant agencies.

## **1. Project Description**

In order to maintain the structural integrity and reliability of its transmission system and perform needed maintenance on its existing facilities, Dominion Virginia Power proposes to rebuild, entirely within the existing right-of-way, approximately 1.3 miles of existing double circuit 230 kV transmission lines, Surry-Yadkin Line #223 and Surry-Churchland Line #226, located between Harbour View Substation and Smithfield Substation in Suffolk, Virginia (the “Rebuild Project”). There is no station work associated with the Rebuild Project.

## **2. Environmental Analysis**

### **A. Air Quality**

The Company will control fugitive dust during construction in accordance with DEQ regulations. During construction, if the weather is dry for an extended period of time, there will be airborne particles from the use of vehicles and equipment within the right-of-way. However, minimal earth disturbance will take place and vehicle speed, which is often a factor in airborne particulate, will be kept to a minimum. Erosion and sediment control is addressed in Section 2.G, below. Equipment and vehicles that are powered by gasoline or diesel motors will also be used during the construction of the line so there will be exhaust from those motors.

The entire width of the existing transmission corridor (175 feet) is currently maintained for operation of existing 230 kV transmission facilities. However, the Rebuild Project may require some trimming of tree limbs along the right-of-way edges to support construction activities. The Company does not expect to burn cleared material, but if necessary, the Company will coordinate with the responsible locality to ensure all local ordinances are met. The Company’s tree clearing methods are described in Section 2.K.

Concurrent with the filing of this application, the Company submitted a letter to DEQ to solicit comments on the proposed Rebuild Project.

### **B. Water Source**

No water source is required for transmission lines so this discussion will focus on water bodies that will be crossed by the proposed transmission line rebuild. The Rebuild Project is located within the Hampton Roads drainage basin, Hydrologic Unit Code 02080208. According to the U.S. Geological Survey (“USGS”) topographic maps, the existing transmission lines span two tidal waterbodies, including the Nansemond River and an un-named tributary to the Nansemond River. No existing structures are located within and no new structures are proposed to be located within the un-named tributary. Any clearing required in the vicinity of this tributary will be performed by hand within 100 feet of both sides, and vegetation less than three inches in diameter will be left undisturbed.

The Nansemond River is a tidal river at the crossing location and as such, a subaqueous encroachment permit is expected to be required from the Virginia Marine Resources Commission (“VMRC”) for the proposed Rebuild Project. In addition, there are four private oyster leases issued by the VMRC within the Nansemond River crossed by the existing transmission line. The existing easement agreements with these lease holders require that Dominion Virginia Power notify the lease holders in advance of any construction. The Company has notified the leaseholders as required and this correspondence is included in Attachment II.A.4.2 of the Appendix.

Concurrent with the filing of this application, the Company submitted a letter to the VMRC to solicit comments on the proposed Rebuild Project. An email from VMRC dated December 21, 2015 is included as Attachment 2.B.1. The Company has prepared a Joint Permit Application for review by the VMRC, DEQ, United States Army Corps of Engineers (“Corps”), and the Suffolk Local Wetlands Board as the project requires crossing jurisdictional waterbodies.

#### **C. Discharge of Cooling Waters**

No discharge of cooling waters is associated with the Rebuild Project.

#### **D. Tidal and Non-tidal Wetlands**

A detailed investigation of waters of the U.S., including wetlands, was conducted by Stantec Consulting Services Inc. (“Stantec”) for the Rebuild Project. Prior to conducting fieldwork, Stantec consulted the USGS 7.5 minute Topographical Quadrangle Map for Benns Church, Virginia (1992 revision) and Bowers Hill, Virginia (2000), the National Wetlands Inventory Interactive Mapper, administered by the U.S. Fish and Wildlife Service (“USFWS”) and the Web Soil Survey, administered by the Natural Resources Conservation Service. The USGS topographic maps show the Rebuild Project area within an existing cleared right-of-way with gently sloping to moderately sloping terrain. Furthermore, the Nansemond River, Bennett Creek, and tidal wetlands are mapped within the Rebuild Project limits. The National Wetlands Inventory map depicted estuarine and emergent wetlands and estuarine and marine deepwater within the Rebuild Project limits.

Wetlands and other waters of the United States (“WOUS”) within the Rebuild Project area were delineated by Stantec in accordance with the method outlined in the 1987 Corps of Engineers Wetlands Delineation Manual, and the 2010 Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Atlantic and Gulf Coastal Plain (Version 2.0). Wetland flags were placed in the field and sequentially numbered to provide an on-site record of the delineation. In total, approximately 1.64 acres of palustrine emergent wetlands, 6.53 acres of estuarine emergent wetlands and approximately 2,137 linear feet (24.5 acres) of the Nansemond River were identified within the Rebuild Project area. The Corps provided a preliminary jurisdictional determination confirming the presence of

these features on October 20, 2015. This determination and a copy of the wetland Delineation Map are included as Attachment 2.D.1.

#### Wetlands Impact Consultation

Concurrent with the filing of this application, the Company submitted the wetland delineation and preliminary jurisdictional determination from the Corps to DEQ to initiate the wetlands impacts consultation. The Company will coordinate with the DEQ as appropriate and obtain any necessary wetlands permits prior to construction.

#### **E. Solid and Hazardous Waste**

On behalf of the Company, Stantec conducted database searches for solid and hazardous wastes and petroleum release sites within a 0.5-mile radius of the proposed Rebuild Project to identify sites that may impact the proposed Rebuild Project. Publically available data from the United States Environmental Protection Agency ("EPA") Facility Registry System was obtained, which provides information about facilities, sites, or places subject to environmental regulation or of environmental interest. Although this data set contains all sites subject to environmental regulation by the EPA or other state authority, including sites that fall under air emissions or wastewater programs, the data was reviewed for only those sites which fall under the EPA's hazardous waste, solid waste, remediation, and underground storage tank programs (*i.e.*, Superfund or Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA), Resource Conservation and Recovery Act (RCRA), or brownfield sites). No such sites were identified within the search radius.

DEQ records were also searched for the presence of solid waste management facilities, Voluntary Remediation Program sites, and petroleum releases. No such sites were identified within the search radius.

#### **F. Natural Heritage, Threatened and Endangered Species**

On behalf of the Company, Stantec conducted online database searches for threatened and endangered species in the vicinity of the Rebuild Project, including the USFWS Information, Planning, and Conservation system, the Virginia Department of Game and Inland Fisheries ("DGIF") Virginia Fish and Wildlife Information Service, the Virginia Department of Conservation and Recreation ("DCR"), Natural Heritage Data Explorer ("NHDE"), and the Center for Conservation Biology ("CCB") Bald Eagle Nest Locator. The results are summarized in a report, included as Attachment 2.F.1, and are presented in the table below.



<b>Species</b>	<b>Results</b>
Northern long-eared bat <i>Myotis septentrionalis</i> Status: FT Database: USFWS	Identified as potentially being present within the Rebuild Project area.
Atlantic sturgeon <i>Acipenser oxyrinchus</i> Status: FE, SE Database: DGIF	Observed in the vicinity of the Rebuild Project area, downstream near the mouth of the Nansemond River. This portion of the Nansemond River has been identified as potential anadromous fish use area.
Loggerhead sea turtle <i>Caretta caretta</i> Status: FT, ST Database: DGIF	Observed in the vicinity of the Rebuild Project area, downstream near the mouth of the Nansemond River.
Peregrine falcon <i>Falco peregrinus</i> Status: ST Database: DGIF	Observed in the vicinity of the Rebuild Project area, downstream near the mouth of the Nansemond River.
Black rail <i>Laterallus jamaicensis</i> Status: SE Database: DGIF	Predicted habitat in the vicinity of the Rebuild Project area.
Canebrake rattlesnake <i>Crotalus horridus</i> Status: SE Database: DGIF, DCR	Predicted habitat in the vicinity of the Rebuild Project area.
Henslow's sparrow <i>Ammodramus henslowii</i> Status: ST Database: DGIF	Predicted habitat in the vicinity of the Rebuild Project area.
Mabee's salamander <i>Ambystoma mabeei</i> Status: ST Database: DGIF	Predicted habitat in the vicinity of the Rebuild Project area.
Bald eagle <i>Haliaeetus leucocephalus</i> Status: Protected Database: CCB	No nests were identified within the vicinity of the Rebuild Project area.

The DGIF identified the Nansemond River as potential anadromous fish use area with a time-of-year restriction ("TOYR") for instream work from February 15 – June 15. A tree clearing TOYR of April 15 – September 15 is also required to avoid impacts to the northern long-eared bat. Based on the proposed scope of work, no impacts to any of the other identified listed species or their associated habitat would be expected.

The DCR NHDE was also searched for Natural Heritage resources crossed by and adjacent to the proposed Rebuild Project. None were identified.

Concurrent with the filing of this application, The Company submitted letters to the DGIF and DCR to solicit comments on the proposed Rebuild Project. As the Company will obtain all necessary permits prior to construction, such as authorization from the VMRC and Corps; coordination with DGIF, DCR, and USFWS will take place through the respective permit processes to avoid and minimize impacts to listed species.

#### **G. Erosion and Sediment Control**

The Company is required to submit annual Erosion and Sediment Control Specifications and an anticipated list of transmission line projects to DEQ for review and approval. The Company's submittal for 2016 will likewise follow DEQ guidelines and this Rebuild Project will be included in the submittal. These specifications are given to the Company's contractors and require erosion and sediment control measures to be in place before construction of the line begins, and specify the requirements for rehabilitation of the right-of-way.

#### **H. Archaeological, Historic, Scenic, Cultural or Architectural Resources**

Stantec was retained by the Company to conduct a Stage I Pre-Application Analysis for the proposed Rebuild Project. This analysis was completed in October 2015 and submitted to the Virginia Department of Historic Resources ("VDHR"). The report is included as Attachment 2.H.1. Preliminary background research was conducted pursuant to the *Guidelines for Assessing Impacts of Proposed Electric Transmission Lines and Associated Facilities on Historic Resources in the Commonwealth of Virginia* (VDHR 2008) for proposed transmission line improvements. As detailed by VDHR guidance, consideration was given to: National Historic Landmark ("NHL") properties located within a 1.5-mile radius of the project centerline; National Register of Historic Places ("NRHP") listed properties, battlefields, and historic landscapes located within a 1.0-mile radius of the project centerline; NRHP-eligible sites located within a 0.5-mile radius of the project centerline; and archaeological sites located within the project right-of-way corridor for the Rebuild Project.

##### Archaeological Resources

No previously recorded archaeological resources were identified that matched the criteria for consideration detailed in VDHR's guidelines.

##### Architectural Resources

The background archival research found 23 previously identified architectural resources located within a 1.5-mile radius of the project centerline for the Rebuild Project. No NHL-listed architectural resources were identified within the 1.5-mile buffer, and no NRHP-listed resources, Battlefields or Historic Landscapes were identified within the 1.0-mile buffer. A single eligible resource, Town Point Farm

(VDHR #133-0242), was identified within the 0.5-mile buffer. Town Point Farm is located approximately 0.25 mile from the proposed corridor. Because the proposed Rebuild Project is consistent with the existing transmission line currently in place, Stantec recommended that the project would have a minimal visual effect to Town Point Farm.

In addition, research indicates that a portion of the Captain John Smith Chesapeake National Historic Trail ("Trail") is crossed at the Nansemond River by the Rebuild Project area. While not a traditionally documented historic resource, the Trail has been identified recently as a potential historic resource and is therefore noted here and considered as part of this assessment. Because the proposed Rebuild Project is consistent with the existing transmission lines which are currently in place, Stantec recommended that the Rebuild Project would have a minimal visual effect to the Captain John Smith Chesapeake National Historic Trail.

By letter dated November 13, 2015, VDHR provided its comments which are included as Attachment 2.H.2.

#### **I. Chesapeake Bay Preservation Areas**

Construction, installation, operation, and maintenance of electric transmission lines are conditionally exempt from the Chesapeake Bay Preservation Act as stated in the exemption for public utilities, railroads, public roads, and facilities in 9 VAC 25-830-150. The Company will meet those conditions.

#### **J. Wildlife Resources**

Agency databases were reviewed and agency consultations initiated to determine if the proposed Rebuild Project has the potential to affect any threatened or endangered species. As discussed in Section 2.F, certain federal- and state-listed species were identified as potentially occurring in the Rebuild Project area. The Company will coordinate with the DGIF and DCR as appropriate to determine whether surveys are necessary and to minimize impacts on wildlife resources.

#### **K. Recreation, Agricultural and Forest Resources**

The portion of the Nansemond River where the proposed Rebuild Project is located may be used for recreational activities, such as watersports, fishing, and bird watching. The Captain John Smith Chesapeake National Historic Trail follows the Nansemond River and runs through the center of the Rebuild Project area. The existing corridor to be used for the proposed Rebuild Project is also crossed by the Suffolk Loop of the DGIF Virginia Birding and Wildlife Trail. This driving trail follows US 17, connecting City of Suffolk parks, Lone Star Lakes and Sleepy Hole, among others. The Rebuild Project is not expected to have an impact on recreation as the existing transmission line was constructed prior to the designation of both the Captain John Smith and Virginia Birding and Wildlife Trails, and will not alter the river such as to restrict recreational activities.

Land uses crossed by the existing corridor include agricultural and residential uses. The entire width of the existing transmission corridor is currently cleared and maintained for 230 kV transmission facility operations. However, the Rebuild Project may require some trimming of tree limbs along the right-of-way edges to support construction activities. Trees and brush located within 100 feet of streams will be cleared by hand in accordance with the Company approved Erosion and Sediment Control specifications.

Any tree along the right of way that is tall enough to endanger the conductors if it were to break at the stump or uproot and fall directly towards the conductors and exhibits signs or symptoms of disease or structural defect that make it an elevated risk for falling will be designated as a “danger tree” and may be removed. The Company’s arborist will contact the property owner if possible before any danger trees are cut except in emergency situations. The Company’s Forestry Coordinator will field inspect the right-of way and designate any danger trees present. Qualified contractors working in accordance with Dominion Virginia Power Electric Transmission specifications will perform all danger tree cutting. The Rebuild Project is not expected to have an impact on agricultural or forest resources as the proposed Project involves rebuilding a portion of an existing line which is already cleared and maintained for existing facility operation and no right-of-way is required.

#### **L. Use of Pesticides and Herbicides**

Of the techniques available, selective foliar is the preferred method of herbicide application. The Company typically maintains transmission line right-of-way by means of selective, low volume applications of EPA approved, non-restricted use herbicides. The goal of this method is to exclude tall growing brush species from the right-of-way by establishing early successional plant communities of native grasses, forbs, and low growing woody vegetation. “Selective” application means the Company sprays only the undesirable plant species (as opposed to broadcast applications). “Low volume” application means the Company uses only the volume of herbicide necessary to remove the selected plant species. The mixture of herbicides used varies from one cycle to the next to avoid the development of resistance by the targeted plants. There are four means of dispersal available to the Company, including backpack, fixed nozzle-radiarc, handgun, and aerial. However, very little right-of-way maintenance incorporates aerial equipment. The Company uses licensed contractors to perform this work that are either certified applicators or registered technicians in the Commonwealth of Virginia.

DEQ has made earlier request that only herbicides approved for aquatic use by the EPA or the USFWS be used in or around any surface water; the Company will comply with this request.

## **M. Geology and Mineral Resources**

The proposed Rebuild Project is underlain by unconsolidated sediments of the Atlantic Coastal Plain. The project area sits atop the Sedgefield Member of the Tabb Formation, which consists of pebbly to boulder, clayey sand and fine to medium, shelly sand grading upward to sand and clayey silt. According to the Virginia Department of Mines, Minerals, and Energy Division of Geology and Mineral Resources' database as well as a review of the USGS topographic maps, there are no active mines crossed by the proposed Rebuild Project. One active sand mine (Permit Number 12548AA/12548AB) is located immediately adjacent to the Project, on the south side of the right-of-way. The Company does not anticipate that the proposed Rebuild Project will result in negative impacts to the geology or mineral resources in the project area.

## **N. Transportation Infrastructure**

The existing right-of-way to be used for the proposed Rebuild Project crosses one road, US 17/Bridge Road. The Company will maintain appropriate minimum vertical clearances above the road surface in and, as the City of Suffolk maintains its own roads, the Company will comply with City requirements if access to the right-of-way from city-maintained roads is required. The existing right-of-way also crosses a federally-maintained navigation channel within the Nansemond River. The Company will maintain the appropriate horizontal and vertical clearances from this channel and will coordinate with the Corps and the U.S. Coast Guard as necessary to ensure the Rebuild Project does not impact navigation.

The Company also requested comments from the Department of Aviation who determined that the Rebuild Project will not be within 20,000 linear feet of a public use airport. See Attachment 2.N.1.

## **Attachments**

## **Attachments**

**From:** Maulorico, Rachael (MRC)  
**To:** Johnson, Jennifer  
**Subject:** Proposed Nansemond River 230kV Transmission Line Crossing Rebuild  
**Date:** Monday, December 21, 2015 4:52:43 PM

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Hi Jennifer,

We have received your request for comments for the proposed Nansemond River 230kV Transmission Line Crossing Rebuild. It appears the project will impact state-owned submerged lands in the Nansemond River, of which we have jurisdiction. The proposed project will require a joint permit application with a public interest review and most likely a permit from the VMRC.

Please feel free to contact me with any questions or concerns.

Merry Christmas!

*Rachael L. Maulorico  
Habitat Engineer  
Virginia Marine Resources Commission  
2600 Washington Avenue, 3rd Floor  
Newport News, VA 23607  
Phone: 757-247-8027  
Cell: 757-504-7276*





DEPARTMENT OF THE ARMY  
US ARMY CORPS OF ENGINEERS  
NORFOLK DISTRICT  
FORT NORFOLK  
803 FRONT STREET  
NORFOLK VA 23510-1011

October 20, 2015

**PRELIMINARY JURISDICTIONAL DETERMINATION**

Eastern Virginia Regulatory Section  
NAO-1992-02840 (Nansemond River)

Dominion Virginia Power  
c/o Mr. Ben Saunders  
701 East Cary Street, 12<sup>th</sup> Floor  
Richmond VA 23219

Dear Mr. Saunders:

This letter is in regard to your request for a preliminary jurisdictional determination for waters of the U.S. (including wetlands) on property known as Nansemond River Crossing Rebuild, located on an approximately 30-acre easement across and adjacent to the Nansemond River in Suffolk, Virginia (see enclosed Delineation Map for project limits).

The maps entitled "Delineation Map Figure 5" (5 pages) by Stantec Consulting Services Inc. dated 09/04/2015 and Corps date stamped as received 09/14/2015 (*copy enclosed*) provides the locations of waters and/or wetlands on the property listed above. The basis for this delineation includes application of the Corps' 1987 Wetland Delineation Manual (*and Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Atlantic and Gulf Coastal Plain Region*) and the positive indicators of wetland hydrology, hydric soils, and hydrophytic vegetation and the presence of an ordinary high water mark.

The Norfolk District has relied on the information and data provided by the applicant or agent. If such information and data subsequently prove to be materially false or materially incomplete, this verification may be suspended or revoked, in whole or in part, and/or the Government may institute appropriate legal proceedings.

Discharges of dredged or fill material, including those associated with mechanized landclearing, into waters and/or wetlands on this site may require a Department of the Army permit and authorization by state and local authorities including a Virginia Water Protection Permit from the Virginia Department of Environmental Quality (DEQ), a permit from the Virginia Marine Resources Commission (VMRC) and/or a permit from your local wetlands board. This letter is a confirmation of the Corps preliminary jurisdiction for the waters and/or wetlands on the subject property and does not authorize any work in these areas. Please obtain all required permits before starting work in the delineated waters/wetland areas.

This is a preliminary jurisdictional determination and is therefore not a legally binding determination regarding whether Corps jurisdiction applies to the waters or wetlands in question. Accordingly, you may either consent to jurisdiction as set out in this preliminary jurisdictional determination and the attachments hereto if you agree with the determination, or you may request and obtain an approved jurisdictional determination.

Enclosed is a copy of the "Preliminary Jurisdictional Determination Form". Please review the document, sign, and return a copy. This delineation of waters and/or wetlands is valid for a period of five years from the date of this letter unless new information warrants revision prior to the expiration date.

If you have any questions, please contact me at (757) 201-7503 or [john.derbish@usace.army.mil](mailto:john.derbish@usace.army.mil).

Sincerely,

A handwritten signature in blue ink, appearing to read "John Derbish", with a stylized flourish at the end.

John Derbish  
Project Manager, Eastern Virginia  
Regulatory Section

Enclosure(s)

Cc:  
Scott Kupiec – Stantec Consulting Services Inc.

## PRELIMINARY JURISDICTIONAL DETERMINATION FORM

### **BACKGROUND INFORMATION:**

**A. REPORT COMPLETION DATE FOR PRELIMINARY JURISDICTIONAL DETERMINATION (JD):** Tuesday, October 20, 2015

**B. NAME AND ADDRESS OF PERSON REQUESTING PRELIMINARY JD:**  
Dominion Virginia Power  
c/o Mr. Ben Saunders  
701 East Cary Street, 12th Floor  
Richmond VA 23219

**C. DISTRICT OFFICE: Norfolk District (CENAO-REG)**

**FILE NAME:** Nansemond River Crossing Rebuild

**FILE NUMBER:** NAO-1993-02840

**D. PROJECT LOCATION(S) AND BACKGROUND INFORMATION:**  
(USE THE ATTACHED TABLE TO DOCUMENT MULTIPLE WATERBODIES AT DIFFERENT SITES)

State: **VIRGINIA** County/parish/borough: Suffolk City:

Center coordinates of site (lat/long in degree decimal format):

Latitude: 36.87648 ° N Longitude: -76.50247 ° W

Universal Transverse Mercator:

Name of nearest waterbody: Nansemond River

Identify (estimate) amount of waters in the review area:

Non-wetland waters: linear feet; width (ft); and/or 24.47 acres.

Cowardin Class: R1

Stream Flow:

Wetlands: 1.64 & 6.53 acres

Cowardin Class: PEM and E2EM

Name of any water bodies on the site that have been identified as Section 10 waters:

Tidal: Nansemond River

Non-Tidal:

**E. REVIEW PERFORMED FOR SITE EVALUATION (CHECK ALL THAT APPLY):**

☒ Office (Desk) Determination. Date: 10/20/2015

☐ Field Determination. Date(s):

1. The Corps of Engineers believes that there may be jurisdictional waters of the United States on the subject site, and the permit applicant or other affected party who requested this preliminary JD is hereby advised of his or her option to request and obtain an approved jurisdictional determination (JD) for that site. Nevertheless, the permit applicant or other person who requested this preliminary JD has declined to exercise the option to obtain an approved JD in this instance and at this time.
2. In any circumstance where a permit applicant obtains an individual permit, or a Nationwide General Permit (NWP) or other general permit verification requiring "pre-construction notification" (PCN), or requests verification for a non-reporting NWP or other general permit, and the permit applicant has not requested an approved JD for the activity, the permit applicant is hereby made aware of the following: (1) the permit applicant has elected to seek a permit authorization based on a preliminary JD, which does not make an official determination of jurisdictional waters; (2) that the applicant has the option to request an approved JD before accepting the terms and conditions of the permit authorization, and that basing a permit authorization on an approved JD could possibly result in less compensatory mitigation being required or different special conditions; (3) that the applicant has the right to request an individual permit rather than accepting the terms and conditions of the NWP or other general permit authorization; (4) that the applicant can accept a permit authorization and thereby agree to comply with all the terms and conditions of that permit, including whatever mitigation requirements the Corps has determined to be necessary; (5) that undertaking any activity in reliance upon the subject permit authorization without requesting an approved JD constitutes the applicant's acceptance of the use of the preliminary JD, but that either form of JD will be processed as soon as is practicable; (6) accepting a permit authorization (e.g., signing a proffered individual permit) or undertaking any activity in reliance on any form of Corps permit authorization based on a preliminary JD constitutes agreement that all wetlands and other water bodies on the site affected in any way by that activity are jurisdictional waters of the United States, and precludes any challenge to such jurisdiction in any administrative or judicial compliance or enforcement action, or in any administrative appeal or in any Federal court; and (7) whether the applicant elects to use either an approved JD or a preliminary JD, that JD will be processed as soon as is practicable. Further, an approved JD, a proffered individual permit (and all terms and conditions contained therein), or individual permit denial can be administratively appealed pursuant to 33 C.F.R. Part 331, and that in any administrative appeal, jurisdictional issues can be raised (see 33 C.F.R. 331.5(a)(2)). If, during that administrative appeal, it becomes necessary to make an official determination whether CWA jurisdiction exists over a site, or to provide an official delineation of jurisdictional waters on the site, the Corps will provide an approved JD to accomplish that result, as soon as is practicable.
3. This preliminary JD finds that there "may be" waters of the United States on the subject project site, and identifies all aquatic features on the site that could be affected by the proposed activity, based on the following information:

#### **SUPPORTING DATA:**

**Data reviewed for preliminary JD (check all that apply) - checked items should be included in case file and, where checked and requested, appropriately reference sources below.**

- ☒ Maps, plans, plots or plat submitted by or on behalf of the applicant/consultant:  
Delineation report provided by Stantec

- ☒ Data sheets prepared/submitted by or on behalf of the applicant/consultant.
- ☒ Office concurs with data sheets/delineation report. Delineation report provided by Stantec
- ☐ Office does not concur with data sheets/delineation report.
- ☐ Data sheets prepared by the Corps:
- ☐ Corps navigable waters' study:
- ☐ U.S. Geological Survey Hydrologic Atlas:
- ☐ USGS NHD data.
- ☐ USGS 8 and 12 digit HUC maps.
- ☒ U.S. Geological Survey map(s). Cite scale & quad name:
- ☒ USDA Natural Resources Conservation Service Soil Survey.
- Citation:
- ☒ National wetlands inventory map(s). Cite name:
- ☐ State/Local wetland inventory map(s):
- ☐ FEMA/FIRM maps:
- ☐ 100-year Floodplain Elevation: (National Geodetic Vertical Datum of 1929)
- ☒ Photographs: ☒ Aerial (Name & Date):
- or ☐ Other (Name & Date):
- ☐ Previous determination(s):
- File no. and date of response letter:
- ☐ Other information (please specify):

**IMPORTANT NOTE: The information recorded on this form has not necessarily been verified by the Corps and should not be relied upon for later jurisdictional determinations.**

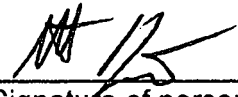
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DN: c=US, o=U.S. Government,  
ou=DoD, ou=PKI, ou=USA,  
cn=DERBISH.JOHN.POE.1513669093  
Date: 2015.10.20 09:33:02 -04'00'

Signature  
Regulatory Project Manager  
(REQUIRED)

2015-10-20

Date

  
Signature of person requesting  
Preliminary JD  
(REQUIRED, unless obtaining the signature is impracticable)

10/21/2015  
Date

## NOTIFICATION OF ADMINISTRATIVE APPEAL OPTIONS AND PROCESS AND REQUEST FOR APPEAL

Applicant: Dominion Virginia Power	File Number: NAO-1993-02840	Date: 10/20/2015
Attached is:		See Section below
<input type="checkbox"/>	INITIAL PROFFERED PERMIT (Standard Permit or Letter of permission)	A
<input type="checkbox"/>	PROFFERED PERMIT (Standard Permit or Letter of permission)	B
<input type="checkbox"/>	PERMIT DENIAL	C
<input type="checkbox"/>	APPROVED JURISDICTIONAL DETERMINATION	D
<input checked="" type="checkbox"/>	PRELIMINARY JURISDICTIONAL DETERMINATION	E

**SECTION I - The following identifies your rights and options regarding an administrative appeal of the above decision. Additional information may be found at <http://usace.army.mil/inet/functions/cw/cecwo/reg> or Corps regulations at 33 CFR Part 331.**

**A: INITIAL PROFFERED PERMIT:** You may accept or object to the permit.

- **ACCEPT:** If you received a Standard Permit, you may sign the permit document and return it to the Norfolk District Engineer for final authorization. If you received a Letter of Permission (LOP), you may accept the LOP and your work is authorized. Your signature on the Standard Permit or acceptance of the LOP means that you accept the permit in its entirety, and waive all rights to appeal the permit, including its terms and conditions, and approved jurisdictional determinations (JD) associated with the permit.
- **OBJECT:** If you object to the permit (Standard or LOP) because of certain terms and conditions therein, you may request that the permit be modified accordingly. You must complete Section II of this form and return the form to the Norfolk District Engineer. Your objections must be received by the Norfolk District Engineer within 60 days of the date of this notice, or you will forfeit your right to appeal the permit in the future. Upon receipt of your letter, the Norfolk District Engineer will evaluate your objections and may: (a) modify the permit to address all of your concerns, (b) modify the permit to address some of your objections, or (c) not modify the permit having determined that the permit should be issued as previously written. After evaluating your objections, the Norfolk District Engineer will send you a proffered permit for your reconsideration, as indicated in Section B below.

**B: PROFFERED PERMIT:** You may accept or appeal the permit

- **ACCEPT:** If you received a Standard Permit, you may sign the permit document and return it to the Norfolk District Engineer for final authorization. If you received a Letter of Permission (LOP), you may accept the LOP and your work is authorized. Your signature on the Standard Permit or acceptance of the LOP means that you accept the permit in its entirety, and waive all rights to appeal the permit, including its terms and conditions, and approved jurisdictional determinations associated with the permit.
- **APPEAL:** If you choose to decline the proffered permit (Standard or LOP) because of certain terms and conditions therein, you may appeal the declined permit under the Corps of Engineers Administrative Appeal Process by completing Section II of this form and sending the form to the North Atlantic Division Engineer, ATTN: CENAD-PD-PSD-O, Fort Hamilton Military Community, Building 301, General Lee Avenue, Brooklyn, NY 11252-6700. This form must be received by the North Atlantic Division Engineer within 60 days of the date of this notice with a copy furnished to the Norfolk District Engineer.

**C: PERMIT DENIAL:** You may appeal the denial of a permit under the Corps of Engineers Administrative Appeal Process by completing Section II of this form and sending the form to the North Atlantic Division Engineer, ATTN: CENAD-PD-PSD-O, Fort Hamilton Military Community, Building 301, General Lee Avenue, Brooklyn, NY 11252-6700. This form must be received by the North Atlantic Division Engineer within 60 days of the date of this notice with a copy furnished to the Norfolk District Engineer.

**D: APPROVED JURISDICTIONAL DETERMINATION:** You may accept or appeal the approved JD or provide new information.

- **ACCEPT:** You do not need to notify the Corps to accept an approved JD. Failure to notify the Corps within 60 days of the date of this notice, means that you accept the approved JD in its entirety, and waive all rights to appeal the approved JD.
- **APPEAL:** If you disagree with the approved JD, you may appeal the approved JD under the Corps of Engineers Administrative Appeal Process by completing Section II of this form and sending the form to the North Atlantic Division Engineer, ATTN: CENAD-PD-PSD-O, Fort Hamilton Military Community, Building 301, General Lee Avenue, Brooklyn, NY 11252-6700. This form must be received by the North Atlantic Division Engineer within 60 days of the date of this notice with a copy furnished to the Norfolk District Engineer.

**E: PRELIMINARY JURISDICTIONAL DETERMINATION:** You do not need to respond to the Corps regarding the preliminary JD. The Preliminary JD is not appealable. If you wish, you may request an approved JD (which may be appealed), by contacting the Corps district for further instruction. Also you may provide new information for further consideration by the Corps to reevaluate the JD.

## **SECTION II - REQUEST FOR APPEAL or OBJECTIONS TO AN INITIAL PROFFERED PERMIT**

**REASONS FOR APPEAL OR OBJECTIONS:** (Describe your reasons for appealing the decision or your objections to an initial proffered permit in clear concise statements. You may attach additional information to this form to clarify where your reasons or objections are addressed in the administrative record.)

**ADDITIONAL INFORMATION:** The appeal is limited to a review of the administrative record, the Corps memorandum for the record of the appeal conference or meeting, and any supplemental information that the review officer has determined is needed to clarify the administrative record. Neither the appellant nor the Corps may add new information or analyses to the record. However, you may provide additional information to clarify the location of information that is already in the administrative record.

### **POINT OF CONTACT FOR QUESTIONS OR INFORMATION:**

If you have questions regarding this decision and/or the appeal process you may contact:

U.S. Army Corps of Engineers, Norfolk District  
ATTN: John Derbish (CENAO-WR-R)  
803 FRONT STREET  
NORFOLK VA 23510-1096  
Telephone: 757-201-7503  
Email: john.derbish@usace.army.mil

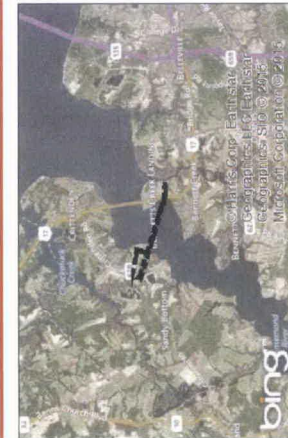
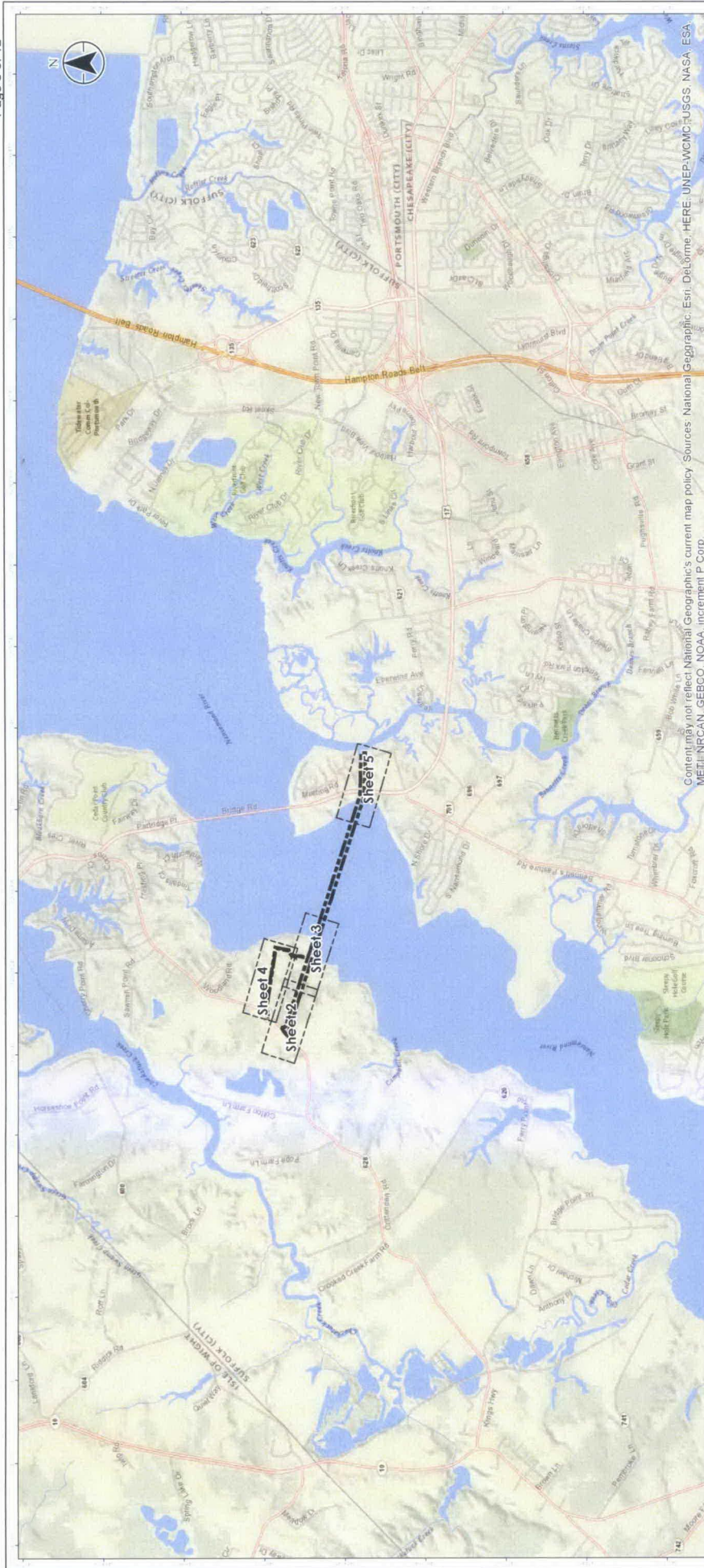
If you only have questions regarding the appeal process you may also contact:

Mr. James W. Haggerty  
Regulatory Program Manager  
U.S. Army Corps of Engineers  
CENAD-PD-OR  
Fort Hamilton Military Community  
301 General Lee Avenue  
Brooklyn, NY 11252-6700  
Telephone: (347) 370-4650  
Email: james.w.haggerty@usace.army.mil

**RIGHT OF ENTRY:** Your signature below grants the right of entry to Corps of Engineers personnel, and any government consultants, to conduct investigations of the project site during the course of the appeal process. You will be provided a 15 day notice of any site investigation, and will have the opportunity to participate in all site investigations.

<p>_____</p> <p>Signature of appellant or agent.</p>	<p>Date:</p>	<p>Telephone number:</p>
--	--------------	--------------------------





### Legend

- Sheet Index
- Project Limits

### Site Data

Project Area	50.23 Acres ±
Project Length	2.22 Miles ±
Palustrine Emergent Wetland	1.64 Acres ±
Tidal Emergent Wetland	6.53 Acres ±
Tidal Waters	24.47 Acres ±
(Excluding Wetlands)	(2,137 L.F. ±)

### Notes

1. Coordinate system: NAD 1983 StatePlane Virginia South FIPS 4603 Feet
2. Base features provided by Dominion Virginia Power
3. Data provided by Bing Maps and National Geographic
4. This map has not been field surveyed and is for planning purposes only
5. Microsoft product screen not(s) printed with permission from Microsoft Corporation



Project Location  
City of Suffolk, VA  
201400227  
Prepared by MGI on 2015-06-02  
Revised by MGI on 2015-06-02  
Independently reviewed by CTR on 2015-06-20

Client Project  
Dominion Virginia Power  
Nonmonetary River  
Lines 223-226  
Figure No.  
5  
Title  
Delineation Map  
USACE Received  
09/04/2015 by JPD  
Submitted: 2015-06-04





**Legend**

- Data Point Location
- Wetland Flag Location
- Approximate Palustrine Emergent Wetland Limits
- Approximate Tidal Emergent Wetland Limits
- Approximate Tidal Water Limits
- Existing Tower Location
- Project Limits
- 2-Foot Contours

**Notes**

1. Coordinate System: NAD 1983 StatePlane Virginia South FIPS 4502 Feet
2. Data points were collected from a ground-based survey of the tower
3. Orthorectified Bing Maps and VGIN 2013
4. The approximate limits of the wetlands and other waters of the U.S. shown on this map have not been field surveyed and are for planning purposes only
5. Microsoft product (screen shot) reprinted with permission from Microsoft Corporation

**Stantec**

Project Location  
City of Suffolk, VA

Client/Project  
Dominion Virginia Power  
Nansemond River  
Lines 223-226

Figure No.  
5

Date  
09/04/2015

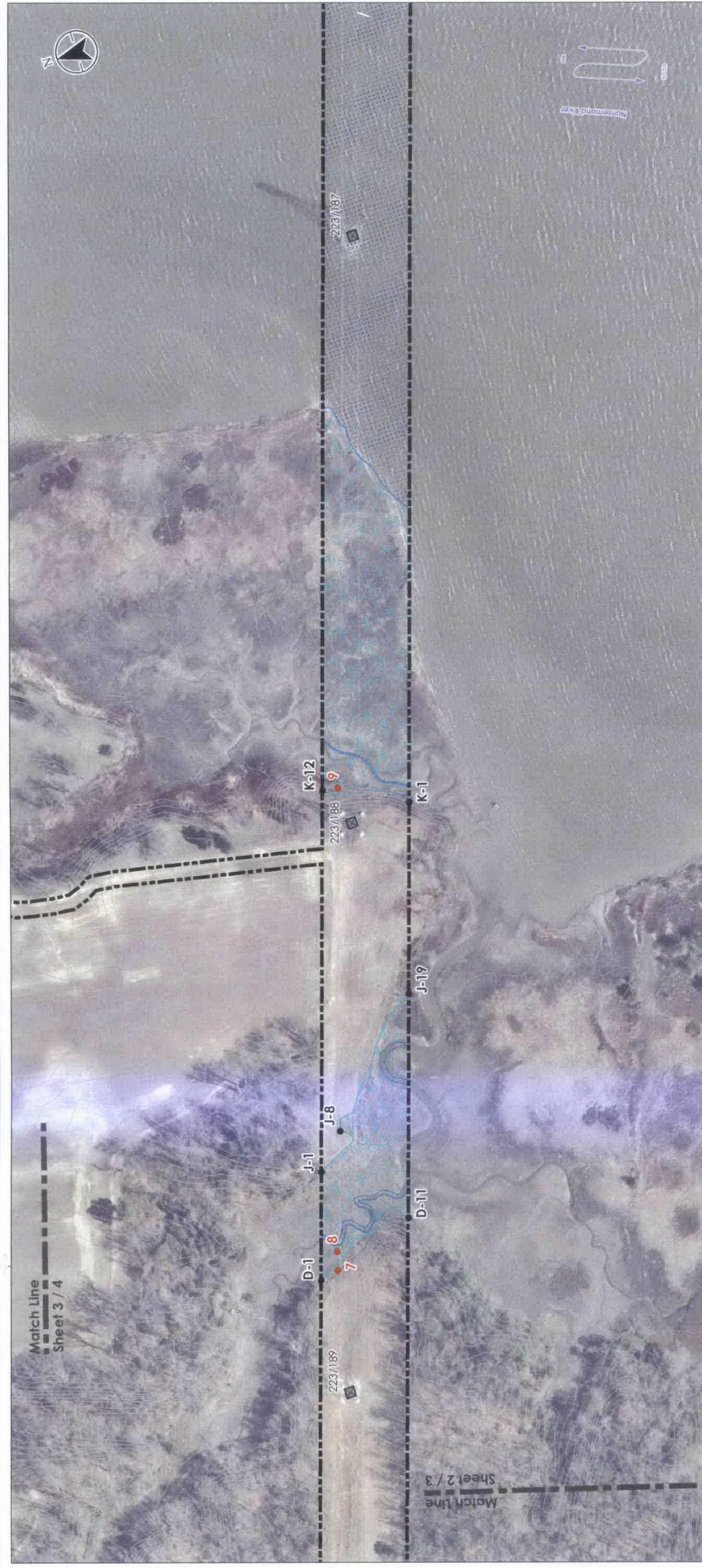
**Delineation Map**  
**USACE Received**  
**09/04/2015 by JPD**

Page 02 of 05

1/2,400 (A) original document size of 11x17)

0 200 400 Feet





**Stantec**

Project Location: City of Fairfax, VA

Client/Project: Dominion Virginia Power  
Nansemond River  
Lines 223-226

Figure No. 5

Time: 09/04/2015 by JPD

10,400 (at original document size of 11x17)

0 200 400 Feet

**Legend**

- Data Point Location
- Welland Flag Location
- Approximate Palustrine Emergent Wetland Limits
- Approximate Tidal Emergent Wetland Limits
- Approximate Tidal Water Limits
- Existing Tower Location
- Project Limits
- 2-Foot Contours

**Notes**

- Coordinate System: NAD 1983 StatePlane Virginia South FIPS 4502 Feet
- Source: Aerial Imagery from Google Earth
- Orthorectified: Yes
- The approximate limits of the wetlands and other waters of the U.S. shown on this map have not been field surveyed and are for planning purposes only.
- Microsoft product (Bing Maps) reprinted with permission from Microsoft Corporation

Disclaimer: Stantec assumes no responsibility for data supplied in electronic format. The recipient accepts full responsibility for ensuring the accuracy and completeness of the data. The recipient releases Stantec, its officers, employees, consultants and agents, from any and all claims arising in any way from the content or provision of the data.





**Legend**

- Data Point Location
- Wetland Flag Location
- Approximate Palustrine Emergent Wetland Limits
- Approximate Tidal Emergent Wetland Limits
- Approximate Tidal Water Limits
- Existing Tower Location
- Project Limits
- 2-Foot Contours

**Notes**

1. Coordinate System: NAD 1983 StatePlane, Virginia South FIPS 4502 Feet
2. Data source: Bing Maps and VGIN 2013
3. Contouring: © Bing Maps and VGIN 2013
4. The approximate limits of the wetlands and other waters of the U.S. shown on this map have not been field survey located and are for planning purposes only
5. Microsoft Product Screen Shots) reprinted with permission from Microsoft Corporation

**Stantec**

Project Location: City of Fairfax, VA  
 Client/Project: Dominion Virginia Power  
 Nantsemond River  
 Lines 223-226  
 Figure No.: 5  
 Title: Delineation Map  
 Date: 09/04/2015 by JPD

USACE Received  
09/04/2015 by JPD

Page 04 of 05





**Stantec**

Project Location: City of Suffolk, VA

Client/Project: Dominion Virginia Power  
Nansemond River  
Lines 223-226

Figure No.: 5

Submitted: 2015-06-04

Prepared by: JGS on 2015-06-04  
Reviewed by: JGS on 2015-06-04  
Independent Review by: JGS on 2015-06-20

**Delineation Map**  
**USACE Received**  
**09/04/2015 by JPD**

Page 05 of 05

Not flagged in the field.  
Boundary based off visual  
observations and offsite resources

0 200 400 Feet

1:2,400 (A) original document size of 11x17

**Legend**

- Data Point Location
- Welland Flag Location
- Approximate Palustrine Emergent Wetland Limits
- Approximate Tidal Emergent Wetland Limits
- Approximate Tidal Water Limits
- Existing Tower Location
- Project Limits
- 2-Foot Contours

**Notes**

1. Coordinate System: NAD 1983 StatePlane Virginia South FIPS 4502 Feet
2. Data Source: Dominion Virginia Power
3. Orthorectified Aerial Imagery © Bing Maps and VGN 2013
4. The approximate limits of the wetlands and other waters of the U.S. shown on this map have not been field surveyed and are for planning purposes only.
5. Microsoft product screen (not) replicated with permission from Microsoft Corporation

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## Memo

---

To: Nadiah F. Younus  
701 East Cary Street, 12th Floor  
Richmond, Virginia 23219

From: Jennifer B. Johnson  
5209 Center Street  
Williamsburg, Virginia 23188

File: #203400527

Date: October 16, 2015

---

**Reference: Threatened and Endangered Species Review**

Online database searches for threatened and endangered species were completed by Stantec for the Nansemond River 230 kV Transmission Line project located in Suffolk, Virginia. The project will take place within existing, cleared and maintained right-of-way and consists of a seven tower stretch, five of which are located within the Nansemond River, of the existing double circuit 230kV overhead transmission line and replacing the existing static line for an additional two spans on either end of the project. The online database search included the U.S. Fish & Wildlife (USFWS) Information, Planning, and Conservation system, the Virginia Department of Game and Inland Fisheries (DGIF) Virginia Fish and Wildlife Information Service, the Virginia Department of Conservation and Recreation (DCR) Natural Heritage Data Explorer, and the Center for Conservation Biology (CCB) Bald Eagle Nest Locator for Virginia.

## Results

The results of the database searches are provided below in Table 1.

**Table 1.** Database Search Results

Species	Status	Database	Results
northern long-eared bat <i>Myotis septentrionalis</i>	FT	USFWS	Identified as potentially being impacted by the project.
Atlantic sturgeon <i>Acipenser oxyrinchus</i>	FE SE	DGIF	Observed in the vicinity of the project. This portion of the Nansemond River has been identified as potential anadromous fish use area.
loggerhead sea turtle <i>Caretta caretta</i>	FT ST	DGIF	Observed in the vicinity of the project.
peregrine falcon <i>Falco peregrinus</i>	ST	DGIF	Observed in the vicinity of the project.
black rail <i>Laterallus jamaicensis</i>	SE	DGIF	Predicted habitat in the vicinity of the project.
canebrake rattlesnake <i>Crotalus horridus</i>	SE	DGIF DCR	Predicted habitat in the vicinity of the project.
Henslow's sparrow <i>Ammodramus henslowii</i>	ST	DGIF	Predicted habitat in the vicinity of the project.
Mabee's salamander <i>Ambystoma mabeei</i>	ST	DGIF	Predicted habitat in the vicinity of the project.
bald eagle <i>Haliaeetus leucocephalus</i>	Protected	CCB	No nests were identified within the vicinity of the project.

FT: federally threatened, FE: federally endangered, ST: state threatened, SE: state endangered



October 16, 2015  
Nadiah F. Yunus  
Page 2 of 2

**Reference: Threatened and Endangered Species Review**

## Conclusion

The DGIF identified the Nansemond River as potential anadromous fish use area with a time-of-year restriction (TOYR) for instream work from February 15 – June 15. The majority of the river consists of relatively shallow water, with depths ranging from 1-4 feet. Water depths ranging from 7-17 feet can be found within the main river channel. Although tower construction is proposed to take place, April – October, construction will only take place on 1-2 towers at a time. If Dominion has flexibility on the construction sequence and could possibly schedule work near the deepest water to take place towards the end or possibly outside the TOYR, this could help mitigate possible impacts to the Atlantic sturgeon and other anadromous fish. If impact driving will be used for the installation of the steel piles, a ramp-up procedure would also help to mitigate impacts. Furthermore, as no tree clearing or access through tidal wetlands is expected, no impacts to any listed terrestrial or avian species would be anticipated. The complete results from the database searches are provided for your reference as well as a Species Conclusion Table describing the potential impacts, if any, to each species identified.

**STANTEC CONSULTING SERVICES INC.**

A handwritten signature in black ink, appearing to read "Jennifer B. Johnson".

Jennifer B. Johnson  
Regulatory Specialist  
Phone: (757) 220-6869  
Fax: (757) 229-4507  
jennifer.johnson@stantec.com

Attachment: Database Search Results  
Species Conclusion Table

U.S. Fish & Wildlife Service

# My project

---

## *IPaC Trust Resource Report*

Generated August 11, 2015 06:25 AM MDT



US Fish &amp; Wildlife Service

# IPaC Trust Resource Report



## Project Description

NAME

My project

PROJECT CODE

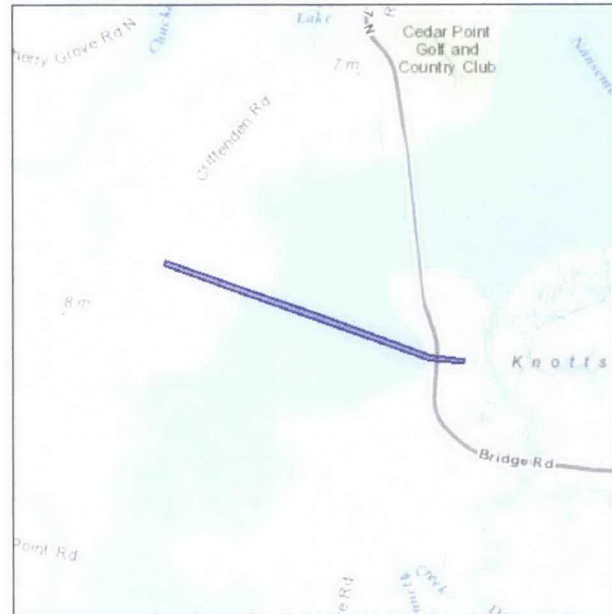
7MJV4-BZI2V-GVPFK-2DD3H-GQJF4Q

LOCATION

Suffolk County, Virginia

DESCRIPTION

No description provided



## U.S. Fish & Wildlife Contact Information

Species in this report are managed by:

**Virginia Ecological Services Field Office**

6669 Short Lane

Gloucester, VA 23061-4410

(804) 693-6694



## Endangered Species

Proposed, candidate, threatened, and endangered species that are managed by the [Endangered Species Program](#) and should be considered as part of an effect analysis for this project.

This unofficial species list is for informational purposes only and does not fulfill the requirements under [Section 7](#) of the Endangered Species Act, which states that Federal agencies are required to "request of the Secretary of Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action." This requirement applies to projects which are conducted, permitted or licensed by any Federal agency.

A letter from the local office and a species list which fulfills this requirement can be obtained by returning to this project on the IPaC website and requesting an Official Species List from the regulatory documents section.

## Mammals

**Northern Long-eared Bat** *Myotis septentrionalis*

Threatened

### CRITICAL HABITAT

**No critical habitat** has been designated for this species.

<https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=A0JE>

## Critical Habitats

Potential effects to critical habitat(s) within the project area must be analyzed along with the endangered species themselves.

There is no critical habitat within this project area

## Migratory Birds

Birds are protected by the [Migratory Bird Treaty Act](#) and the Bald and Golden Eagle Protection Act.

Any activity which results in the take of migratory birds or eagles is prohibited unless authorized by the U.S. Fish and Wildlife Service (1). There are no provisions for allowing the take of migratory birds that are unintentionally killed or injured.

You are responsible for complying with the appropriate regulations for the protection of birds as part of this project. This involves analyzing potential impacts and implementing appropriate conservation measures for all project activities.

<b>American Kestrel</b> <i>Falco sparverius paulus</i> Year-round	Bird of conservation concern
<b>American Oystercatcher</b> <i>Haematopus palliatus</i> Year-round <a href="https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?scode=B0G8">https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?scode=B0G8</a>	Bird of conservation concern
<b>American Bittern</b> <i>Botaurus lentiginosus</i> Season: Wintering <a href="https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?scode=B0F3">https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?scode=B0F3</a>	Bird of conservation concern
<b>Bald Eagle</b> <i>Haliaeetus leucocephalus</i> Year-round <a href="https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?scode=B008">https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?scode=B008</a>	Bird of conservation concern
<b>Black Rail</b> <i>Laterallus jamaicensis</i> Season: Breeding <a href="https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?scode=B09A">https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?scode=B09A</a>	Bird of conservation concern
<b>Black-throated Green Warbler</b> <i>Dendroica virens</i> Season: Breeding	Bird of conservation concern
<b>Brown-headed Nuthatch</b> <i>Sitta pusilla</i> Year-round	Bird of conservation concern
<b>Fox Sparrow</b> <i>Passerella iliaca</i> Season: Wintering	Bird of conservation concern
<b>Gull-billed Tern</b> <i>Gelochelidon nilotica</i> Season: Breeding	Bird of conservation concern
<b>Hudsonian Godwit</b> <i>Limosa haemastica</i> Season: Migrating	Bird of conservation concern
<b>Least Bittern</b> <i>Ixobrychus exilis</i> Season: Breeding	Bird of conservation concern
<b>Lesser Yellowlegs</b> <i>Tringa flavipes</i> Season: Wintering	Bird of conservation concern
<b>Marbled Godwit</b> <i>Limosa fedoa</i> Season: Wintering	Bird of conservation concern
<b>Nelson's Sparrow</b> <i>Ammodramus nelsoni</i> Season: Wintering	Bird of conservation concern

<b>Peregrine Falcon</b> <i>Falco peregrinus</i> Season: Wintering <a href="https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?scode=B0FU">https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?scode=B0FU</a>	Bird of conservation concern
<b>Pied-billed Grebe</b> <i>Podilymbus podiceps</i> Year-round	Bird of conservation concern
<b>Prairie Warbler</b> <i>Dendroica discolor</i> Season: Breeding	Bird of conservation concern
<b>Prothonotary Warbler</b> <i>Protonotaria citrea</i> Season: Breeding	Bird of conservation concern
<b>Purple Sandpiper</b> <i>Calidris maritima</i> Season: Wintering	Bird of conservation concern
<b>Red Knot</b> <i>Calidris canutus rufa</i> Season: Wintering <a href="https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?scode=B0DM">https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?scode=B0DM</a>	Bird of conservation concern
<b>Red-headed Woodpecker</b> <i>Melanerpes erythrocephalus</i> Year-round	Bird of conservation concern
<b>Rusty Blackbird</b> <i>Euphagus carolinus</i> Season: Wintering	Bird of conservation concern
<b>Saltmarsh Sparrow</b> <i>Ammodramus caudacutus</i> Year-round	Bird of conservation concern
<b>Seaside Sparrow</b> <i>Ammodramus maritimus</i> Year-round	Bird of conservation concern
<b>Sedge Wren</b> <i>Cistothorus platensis</i> Season: Wintering	Bird of conservation concern
<b>Short-billed Dowitcher</b> <i>Limnodromus griseus</i> Season: Wintering	Bird of conservation concern
<b>Short-eared Owl</b> <i>Asio flammeus</i> Season: Wintering <a href="https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?scode=B0HD">https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?scode=B0HD</a>	Bird of conservation concern
<b>Snowy Egret</b> <i>Egretta thula</i> Season: Breeding	Bird of conservation concern
<b>Swainson's Warbler</b> <i>Limnothlypis swainsonii</i> Season: Breeding	Bird of conservation concern
<b>Wood Thrush</b> <i>Hylocichla mustelina</i> Season: Breeding	Bird of conservation concern
<b>Worm Eating Warbler</b> <i>Helmitheros vermivorum</i> Season: Breeding	Bird of conservation concern

## Refuges

Any activity proposed on [National Wildlife Refuge](#) lands must undergo a 'Compatibility Determination' conducted by the Refuge. If your project overlaps or otherwise impacts a Refuge, please contact that Refuge to discuss the authorization process.

There are no refuges within this project area



## Wetlands

Impacts to [NWI wetlands](#) and other aquatic habitats from your project may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal Statutes.

Project proponents should discuss the relationship of these requirements to their project with the Regulatory Program of the appropriate [U.S. Army Corps of Engineers District](#).

### DATA LIMITATIONS

The Service's objective of mapping wetlands and deepwater habitats is to produce reconnaissance level information on the location, type and size of these resources. The maps are prepared from the analysis of high altitude imagery. Wetlands are identified based on vegetation, visible hydrology and geography. A margin of error is inherent in the use of imagery; thus, detailed on-the-ground inspection of any particular site may result in revision of the wetland boundaries or classification established through image analysis.

The accuracy of image interpretation depends on the quality of the imagery, the experience of the image analysts, the amount and quality of the collateral data and the amount of ground truth verification work conducted. Metadata should be consulted to determine the date of the source imagery used and any mapping problems.

Wetlands or other mapped features may have changed since the date of the imagery or field work. There may be occasional differences in polygon boundaries or classifications between the information depicted on the map and the actual conditions on site.

### DATA EXCLUSIONS

Certain wetland habitats are excluded from the National mapping program because of the limitations of aerial imagery as the primary data source used to detect wetlands. These habitats include seagrasses or submerged aquatic vegetation that are found in the intertidal and subtidal zones of estuaries and nearshore coastal waters. Some deepwater reef communities (coral or tubercid worm reefs) have also been excluded from the inventory. These habitats, because of their depth, go undetected by aerial imagery.

### DATA PRECAUTIONS

Federal, state, and local regulatory agencies with jurisdiction over wetlands may define and describe wetlands in a different manner than that used in this inventory. There is no attempt, in either the design or products of this inventory, to define the limits of proprietary jurisdiction of any Federal, state, or local government or to establish the geographical scope of the regulatory programs of government agencies. Persons intending to engage in activities involving modifications within or adjacent to wetland areas should seek the advice of appropriate federal, state, or local agencies concerning specified agency regulatory programs and proprietary jurisdictions that may affect such activities.

Wetland data is unavailable at this time.

**VaFWIS Search Report** Compiled on 5/5/2015, 12:24:22 PM[Help](#)

Known or likely to occur within a **2 mile buffer around line beginning 36.8722778**  
**-76.4901944**  
**in 800 Suffolk City, VA**

[View Map of  
Site Location](#)

581 Known or Likely Species ordered by Status Concern for Conservation  
 (displaying first 45) (45 species with Status\* or Tier I\*\* or Tier II\*\* )

<a href="#">BOVA Code</a>	<a href="#">Status*</a>	<a href="#">Tier**</a>	<a href="#">Common Name</a>	<a href="#">Scientific Name</a>	<a href="#">Confirmed</a>	<a href="#">Database(s)</a>
040228	FESE	I	<a href="#">Woodpecker, red-cockaded</a>	Picoides borealis		BOVA
010032	FESE	II	<a href="#">Sturgeon, Atlantic</a>	Acipenser oxyrinchus	<a href="#">Yes</a>	BOVA,SppObs,HU6
030074	FESE		<a href="#">Turtle, Kemp's ridley sea</a>	Lepidochelys kempii		BOVA
030071	FTST	I	<a href="#">Turtle, loggerhead sea</a>	Caretta caretta	<a href="#">Yes</a>	BOVA,SppObs
040120	FTST	I	<a href="#">Plover, piping</a>	Charadrius melodus		BOVA
030064	SE	I	<a href="#">Turtle, eastern chicken</a>	Deirochelys reticularia reticularia		HU6
040110	SE	I	<a href="#">Rail, black</a>	Laterallus jamaicensis	<a href="#">Potential</a>	BOVA,Habitat,HU6
050034	SE	I	<a href="#">Bat, Rafinesque's eastern big- eared</a>	Corynorhinus rafinesquii macrotis		BOVA,HU6
020052	SE	II	<a href="#">Salamander, eastern tiger</a>	Ambystoma tigrinum		HU6
030013	SE	II	<a href="#">Rattlesnake, canebrake</a>	Crotalus horridus	<a href="#">Potential</a>	BOVA,Habitat,HU6
040096	ST	I	<a href="#">Falcon, peregrine</a>	Falco peregrinus	<a href="#">Yes</a>	BOVA,SppObs,HU6
040129	ST	I	<a href="#">Sandpiper, upland</a>	Bartramia longicauda		BOVA
040293	ST	I	<a href="#">Shrike, loggerhead</a>	Lanius ludovicianus		BOVA
040379	ST	I	<a href="#">Sparrow,</a>	Ammodramus	<a href="#">Potential</a>	Habitat,HU6



			<u>Henslow's</u>	henslowii		
020044	ST	II	<u>Salamander, Mabee's</u>	Ambystoma mabeei	<u>Potential</u>	BOVA,Habitat,HU6
020002	ST	II	<u>Treefrog, barking</u>	Hyla gratiosa		HU6
050008	ST	IV	<u>Shrew, Dismal Swamp southeastern</u>	Sorex longirostris fisheri		BOVA,HU6
040292	ST		<u>Shrike, migrant loggerhead</u>	Lanius ludovicianus migrans		BOVA
040144	FP	IV	<u>Knot, red</u>	Calidris canutus rufa		BOVA,HU6
050022	FP		<u>Bat, northern long-eared</u>	Myotis septentrionalis		BOVA
010038	FC	IV	<u>Alewife</u>	Alosa pseudoharengus		BOVA,HU6
010045	FC		<u>Herring, blueback</u>	Alosa aestivalis		BOVA
070131	FS	I	<u>Isopod, Phreatic</u>	Caecidotea phreatica		BOVA,HU6
100176	FS	I	<u>Skipper, Arogos</u>	Atrytone arogos arogos		BOVA
040093	FS	II	<u>Eagle, bald</u>	Haliaeetus leucocephalus	<u>Yes</u>	BOVA,BAEANests,HU6
070105	FS	III	<u>Crayfish, Chowanoke</u>	Orconectes virginienensis		BOVA
100192	FS	III	<u>Roadside-skipper, dusky</u>	Amblyscirtes alternata		BOVA
100002	FS	III	<u>Skipper, Duke's (or scarce swamp)</u>	Euphyes dukesi		BOVA
100001	FS	IV	<u>fritillary, Diana</u>	Speyeria diana		BOVA
030067	CC	II	<u>Terrapin, northern diamond-backed</u>	Malaclemys terrapin terrapin	<u>Potential</u>	BOVA,Habitat,HU6
030063	CC	III	<u>Turtle, spotted</u>	Clemmys guttata		BOVA,HU6
040225		I	<u>Sapsucker, yellow-bellied</u>	Sphyrapicus varius		BOVA
040319		I	<u>Warbler, black-throated green</u>	Dendroica virens		BOVA
040422		I	<u>Warbler, Wayne's</u>	Dendroica virens waynei		HU6

020063	II	<a href="#">Toad, oak</a>	Anaxyrus quercicus	<a href="#">Potential</a>	BOVA, Habitat, HU6
040038	II	<a href="#">Bittern, American</a>	Botaurus lentiginosus		BOVA
040052	II	<a href="#">Duck, American black</a>	Anas rubripes		BOVA, HU6
040029	II	<a href="#">Heron, little blue</a>	Egretta caerulea caerulea		BOVA
040036	II	<a href="#">Night-heron, yellow-crowned</a>	Nyctanassa violacea violacea		BOVA
040105	II	<a href="#">Rail, king</a>	Rallus elegans	<a href="#">Potential</a>	BOVA, Habitat, HU6
040186	II	<a href="#">Tern, least</a>	Sterna antillarum	<a href="#">Potential</a>	BOVA, Habitat, HU6
040187	II	<a href="#">Tern, royal</a>	Sterna maxima maximus	<a href="#">Potential</a>	BOVA, BBA
040320	II	<a href="#">Warbler, cerulean</a>	Dendroica cerulea		BOVA, HU6
040304	II	<a href="#">Warbler, Swainson's</a>	Limnothlypis swainsonii		BOVA, HU6
040266	II	<a href="#">Wren, winter</a>	Troglodytes troglodytes		BOVA

To view **All 581 species** [View 581](#)

\* FE=Federal Endangered; FT=Federal Threatened; SE=State Endangered; ST=State Threatened; FP=Federal Proposed; FC=Federal Candidate; FS=Federal Species of Concern; CC=4 VAC 15-360-10 section 5 Collection Concern

\*\* I=VA Wildlife Action Plan - Tier I - Critical Conservation Need;  
 II=VA Wildlife Action Plan - Tier II - Very High Conservation Need;  
 III=VA Wildlife Action Plan - Tier III - High Conservation Need;  
 IV=VA Wildlife Action Plan - Tier IV - Moderate Conservation Need

[View Map of All Query Results from All Observation Tables](#)

Bat Colonies or Hibernacula: **Not Known**

**Anadromous Fish Use Streams** (4 records)

[View Map of All Anadromous Fish Use Streams](#)

Stream ID	Stream Name	Reach Status	Anadromous Fish Species			View Map
			Different Species	Highest TE *	Highest Tier **	
P118	<a href="#">Nansemond river</a>	Potential	0			<a href="#">Yes</a>
P22	<a href="#">Bennett creek</a>	Potential	0			<a href="#">Yes</a>



P46	<a href="#">Chucktuck creek</a>	Potential	0		<a href="#">Yes</a>
P87	<a href="#">Knotts creek</a>	Potential	0		<a href="#">Yes</a>

**Impediments to Fish Passage** ( 1 records )
[View Map of All Fish Impediments](#)

ID	Name	River	View Map
792	<a href="#">FERRY POINT DAM</a>	TR-NANSEMOND RIVER	<a href="#">Yes</a>

**Colonial Water Bird Survey**

N/A

**Threatened and Endangered Waters**

N/A

**Managed Trout Streams**

N/A

**Bald Eagle Concentration Areas and Roosts**

N/A

**Bald Eagle Nests** ( 3 records )
[View Map of All Query Results Bald Eagle Nests](#)

Nest	N Obs	Latest Date	DGIF Nest Status	View Map
<a href="#">SK0201</a>	7	Apr 26 2006	HISTORIC	<a href="#">Yes</a>
<a href="#">SK0401</a>	15	Apr 18 2011	RECENTLY ACTIVE	<a href="#">Yes</a>
<a href="#">SK0601</a>	13	Apr 18 2011	RECENTLY ACTIVE	<a href="#">Yes</a>

Displayed 3 Bald Eagle Nests

**Species Observations** ( 28 records - displaying first 20 , 10 Observations with Threatened or Endangered species )
[View Map of All Query Results Species Observations](#)

obsID	class	Date	Observer	N Species	View

		Observed		Different Species	Highest TE*	Highest Tier**	Map
<a href="#">62964</a>	SppObs	Apr 6 1997	USFWS	1	FESE	II	<a href="#">Yes</a>
<a href="#">607701</a>	SppObs	Oct 11 2008	Lisa; Wright	1	FTST	I	<a href="#">Yes</a>
<a href="#">607950</a>	SppObs	Oct 10 2008	Christina; Trapani	1	FTST	I	<a href="#">Yes</a>
<a href="#">608486</a>	SppObs	Jun 22 2010	Bryan; Watts	1	ST	I	<a href="#">Yes</a>
<a href="#">330010</a>	SppObs	Jun 4 2009	Center for Conservation Biology, College of William and Mary - VCU	1	ST	I	<a href="#">Yes</a>
<a href="#">305438</a>	SppObs	May 1 2004	BRYAN D. WATTS, THE CENTER FOR CONSERVATION BIOLOGY	1	ST	I	<a href="#">Yes</a>
<a href="#">305425</a>	SppObs	May 1 2003	BRYAN D. WATTS, THE CENTER FOR CONSERVATION BIOLOGY	1	ST	I	<a href="#">Yes</a>
<a href="#">305061</a>	SppObs	May 1 2003	brian watts	1	ST	I	<a href="#">Yes</a>
<a href="#">305407</a>	SppObs	May 1 2002	BRYAN D. WATTS, THE CENTER FOR CONSERVATION BIOLOGY	1	ST	I	<a href="#">Yes</a>
<a href="#">305389</a>	SppObs	May 1 2001	BRYAN D. WATTS, THE CENTER FOR CONSERVATION BIOLOGY	1	ST	I	<a href="#">Yes</a>
<a href="#">4998</a>	SppObs	Jan 1 1900	Townley R. Wolfe, III	2		IV	<a href="#">Yes</a>
<a href="#">365905</a>	SppObs	Jan 1 1900		3		IV	<a href="#">Yes</a>
<a href="#">365884</a>	SppObs	Jan 1 1900		1		IV	<a href="#">Yes</a>
<a href="#">53625</a>	SppObs	May 20 1996	Noel Bumpas	2			<a href="#">Yes</a>
<a href="#">26969</a>	SppObs	Jan 1 1900	Mitchell, J. C.	1			<a href="#">Yes</a>
<a href="#">27504</a>	SppObs	Jan 1 1900	Mitchell, J. C.	1			<a href="#">Yes</a>
<a href="#">365904</a>	SppObs	Jan 1 1900		1			<a href="#">Yes</a>
<a href="#">365903</a>	SppObs	Jan 1 1900		1			<a href="#">Yes</a>
		Jan 1					



<a href="#">365872</a>	SppObs	1900		1		<a href="#">Yes</a>
<a href="#">366082</a>	SppObs	Jan 1 1900		1		<a href="#">Yes</a>

Displayed 20 Species Observations

**Selected 28 Observations** [View all 28 Species Observations](#)

### Habitat Predicted for Aquatic WAP Tier I & II Species

N/A

### Habitat Predicted for Terrestrial WAP Tier I & II Species ( 8 Species )

[View Map of Combined Terrestrial Habitat Predicted for 8 WAP Tier I & II Species Listed Below](#)

ordered by Status Concern for Conservation

BOVA Code	Status*	Tier**	Common Name	Scientific Name	View Map
040110	SE	I	<a href="#">Rail, black</a>	Laterallus jamaicensis	<a href="#">Yes</a>
030013	SE	II	<a href="#">Rattlesnake, canebrake</a>	Crotalus horridus	<a href="#">Yes</a>
040379	ST	I	<a href="#">Sparrow, Henslow's</a>	Ammodramus henslowii	<a href="#">Yes</a>
020044	ST	II	<a href="#">Salamander, Mabee's</a>	Ambystoma mabeei	<a href="#">Yes</a>
030067	CC	II	<a href="#">Terrapin, northern diamond-backed</a>	Malaclemys terrapin terrapin	<a href="#">Yes</a>
020063		II	<a href="#">Toad, oak</a>	Anaxyrus quercicus	<a href="#">Yes</a>
040105		II	<a href="#">Rail, king</a>	Rallus elegans	<a href="#">Yes</a>
040186		II	<a href="#">Tern, least</a>	Sterna antillarum	<a href="#">Yes</a>

### Virginia Breeding Bird Atlas Blocks ( 1 records )

[View Map of All Query Results](#)

[Virginia Breeding Bird Atlas Blocks](#)

BBA ID	Atlas Quadrangle Block Name	Breeding Bird Atlas Species			View Map
		Different Species	Highest TE*	Highest Tier**	
58046	<a href="#">Benns Church, SE</a>	74		II	<a href="#">Yes</a>

### Public Holdings:

N/A

**Summary of BOVA Species Associated with Cities and Counties of the Commonwealth of Virginia:**

FIPS Code	City and County Name	Different Species	Highest TE	Highest Tier
800	<a href="#">Suffolk City</a>	532	FESE	I

**USGS 7.5' Quadrangles:**

Chuckatuck

Benns Church

Bowers Hill

Newport News South



# Species Observations where Sturgeon, Atlantic (010032) observed 62964

36,52,22.2 -76,29,24.9  
is the Search Point

Display Item Location is  
at center not at map center

## Show Position Rings

☐ Yes ☒ No  
1 mile and 1/4 mile at the  
Search Point

## Show Search Area

☒ Yes ☐ No  
2 Search distance miles  
buffer

Display Search Point is  
at center not at map center



## Base Map Choices

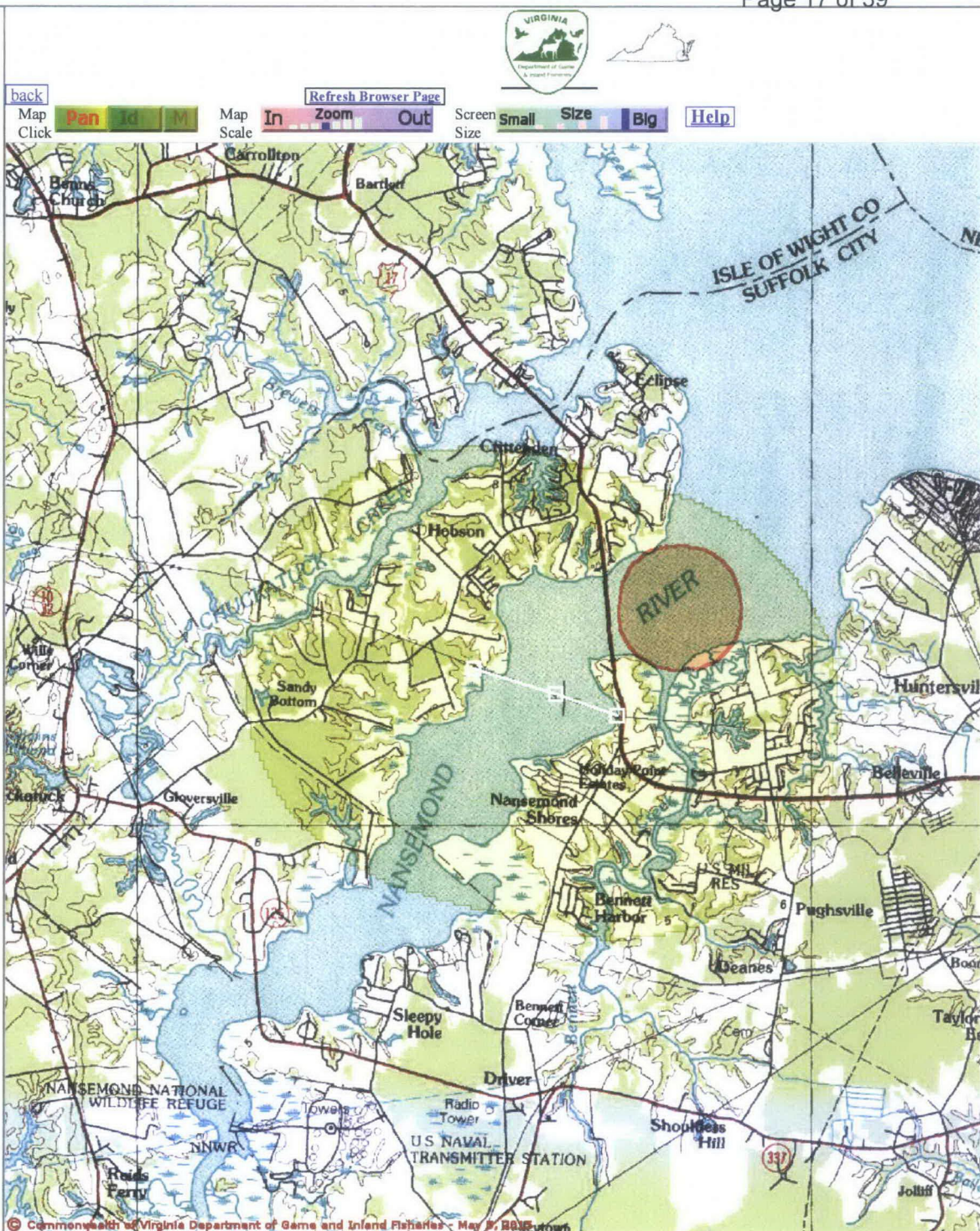
Topography

## Map Overlay Choices

Current List: Search,  
Observation

## Map Overlay Legend

 2 mile radius  
Search Area  
 Data  
Observation Site



Point of Search 36,52,22.2 -76,29,24.9

Map Location 36,52,32.8 -76,30,08.1

Select Coordinate System: ☒ Degrees, Minutes, Seconds Latitude - Longitude

☐ Decimal Degrees Latitude - Longitude

☐ Meters UTM NAD83 East North Zone

☐ Meters UTM NAD27 East North Zone

Base Map source: USGS 1:100,000 topographic maps (see [Microsoft.terraServer-usa.com](http://Microsoft.terraServer-usa.com) for details)



Map projection is UTM Zone 18 NAD 1983 with left 358116 and top 4090148. Pixel size is 14. . Coordinates displayed are Degrees, Minutes, Seconds North and West. Map is currently displayed as 1000 columns by 1000 rows for a total of 1000000 pixels. The map display represents 16000 meters east to west by 16000 meters north to south for a total of 256.0 square kilometers. The map display represents 52502 feet east to west by 52502 feet north to south for a total of 98.8 square miles.

Topographic maps and Black and white aerial photography for year 1990+- are from the United States Department of the Interior, United States Geological Survey. Color aerial photography acquired 2002 is from Virginia Base Mapping Program, Virginia Geographic Information Network.

Shaded topographic maps are from TOPO! ©2006 National Geographic

<http://www.national.geographic.com/topo>

All other map products are from the Commonwealth of Virginia Department of Game and Inland Fisheries.

map assembled 2015-05-05 12:48:27 (qa/qc December 5, 2012 8:04 - tn=652586.1 dist=32181)

```
$poi=36.8728333 -76.4902500$query=select xy.x,xy.y, xxvy256.Displace_X,
xxvy256.Displace_Y, cc.High_TE, obs.FeatType from
vafwis_tables.dbo.vcvSppObs_XY xy join vafwis_tables.dbo.cvSppObs obs on
obs.obsID = xy.obsID join vafwis_tables.dbo.cvSppObsSite256 s256 on s256.obsID =
xy.obsID join vafwis_tables.dbo.cvSppObsSitexxvy256 xxvy256 on xxvy256.obsSite256
= s256.obsSite256 join vafwis_tables.dbo.cvSppObs_CC cc on cc.obsID = xy.obsID
JOIN vafwis_tables.dbo.udf_List2Table('62964','') list on list.item = obs.obsID
```

| [DGIF](#) | [Credits](#) | [Disclaimer](#) | [Contact \[shirl.dressler@dgif.virginia.gov\]\(mailto:shirl.dressler@dgif.virginia.gov\)](#) | [Please view our privacy policy](#) |  
© 1998-2015 Commonwealth of Virginia Department of Game and Inland Fisheries



# Species Observations where Turtle, loggerhead sea (030071) observed 607950

36,52,22.2 -76,29,24.9  
is the Search Point

Display Item Location is  
at center not at map center

## Show Position Rings

☐ Yes ☒ No  
1 mile and 1/4 mile at the  
Search Point

## Show Search Area

☒ Yes ☐ No  
2 Search distance miles  
buffer

Display Search Point is  
at center not at map center


## Base Map Choices

Topography

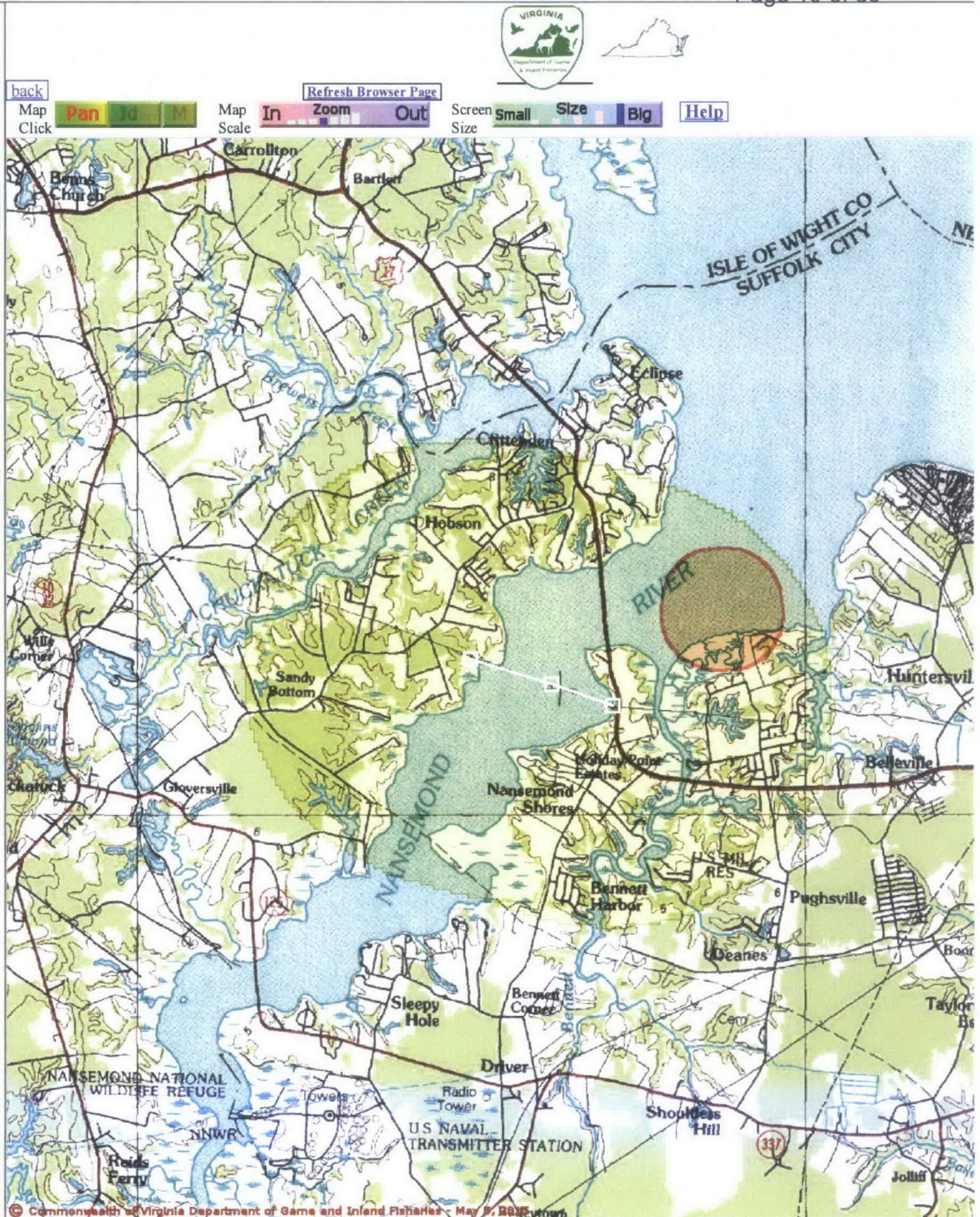
## Map Overlay Choices

Current List: Search,  
Observation

## Map Overlay Legend

 2 mile radius  
Search Area

 Data  
Observation Site



Point of Search 36,52,22.2 -76,29,24.9

Map Location 36,52,32.8 -76,30,08.1

Select Coordinate System: ☒ Degrees, Minutes, Seconds Latitude - Longitude

☐ Decimal Degrees Latitude - Longitude

☐ Meters UTM NAD83 East North Zone

☐ Meters UTM NAD27 East North Zone

Base Map source: USGS 1:100,000 topographic maps (see [Microsoft.terraserver-usa.com](http://Microsoft.terraserver-usa.com) for details)



Map projection is UTM Zone 18 NAD 1983 with left 358116 and top 4090148. Pixel size is 14 . Coordinates displayed are Degrees, Minutes, Seconds North and West. Map is currently displayed as 1000 columns by 1000 rows for a total of 1000000 pixels. The map display represents 16000 meters east to west by 16000 meters north to south for a total of 256.0 square kilometers. The map display represents 52502 feet east to west by 52502 feet north to south for a total of 98.8 square miles.

Topographic maps and Black and white aerial photography for year 1990+ are from the United States Department of the Interior, United States Geological Survey. Color aerial photography acquired 2002 is from Virginia Base Mapping Program, Virginia Geographic Information Network.

Shaded topographic maps are from TOPO! ©2006 National Geographic  
<http://www.national-geographic.com/topo>

All other map products are from the Commonwealth of Virginia Department of Game and Inland Fisheries.

map assembled 2015-05-05 12:53:11 (qa/qc December 5, 2012 8:04 - tn=652586.1 dist=3218  
1)

```
$poi=36.8728333 -76.4902500$query=select xy.x,xy.y, xxvy256.Displace_X,
xxvy256.Displace_Y, cc.High_TE, obs.FeatType from
vafwis_tables.dbo.vcvSppObs_XY xy join vafwis_tables.dbo.cvSppObs obs on
obs.obsID = xy.obsID join vafwis_tables.dbo.cvSppObsSite256 s256 on s256.obsID =
xy.obsID join vafwis_tables.dbo.cvSppObsSitexxvy256 xxvy256 on xxvy256.obsSite256
= s256.obsSite256 join vafwis_tables.dbo.cvSppObs_CC cc on cc.obsID = xy.obsID
JOIN vafwis_tables.dbo.udf_List2Table('607950','') list on list.item = obs.obsID
```

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**Predicted Habitat  
(040110) Rail, black**

36,52,22.2 -76,29,24.9  
is the Search Point

Display Item Location is  
at center not at map center

**Show Position Rings**

☐ Yes ☒ No

1 mile and 1/4 mile at the  
Search Point

**Show Search Area**

☒ Yes ☐ No

2 Search distance miles  
buffer

Display Search Point is  
at center not at map center

**Base Map Choices**

Topography

**Map Overlay Choices**

Current List: Search,  
Observation

**Map Overlay Legend**

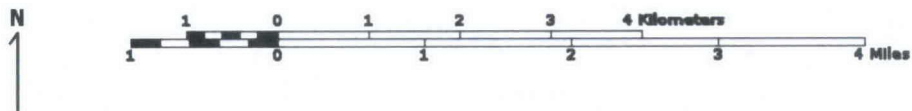
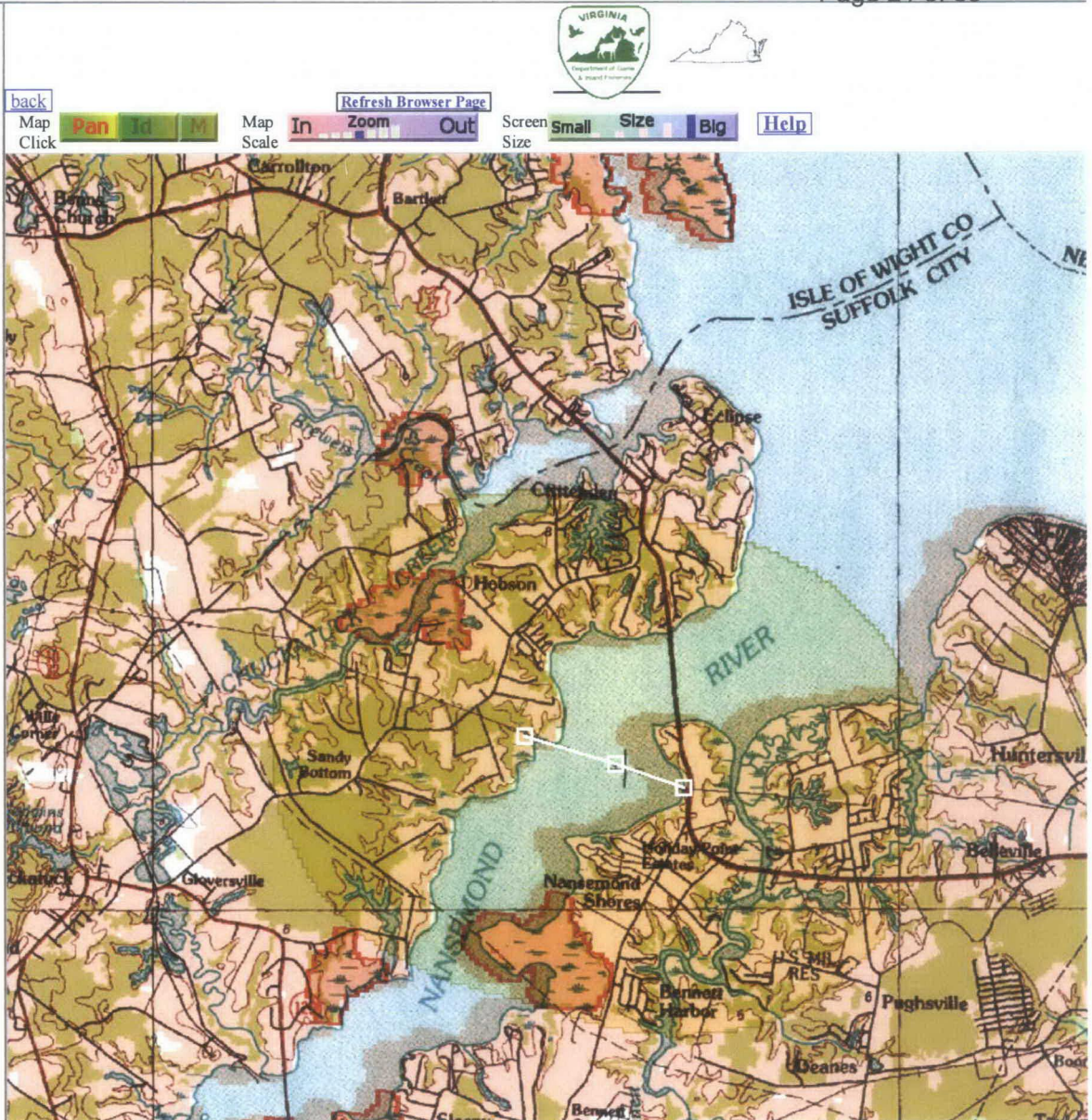
Predicted Habitat  
WAP Tier I & II

Aquatic

Terrestrial

2 mile radius  
Search Area

Data  
Observation Site



Point of Search 36,52,22.2 -76,29,24.9

Map Location 36,52,32.8 -76,30,08.1

Select Coordinate System: ☒ Degrees, Minutes, Seconds Latitude - Longitude

☐ Decimal Degrees Latitude - Longitude

☐ Meters UTM NAD83 East North Zone

☐ Meters UTM NAD27 East North Zone

Base Map source: USGS 1:100,000 topographic maps (see [Microsoft.terra-server-usa.com](http://Microsoft.terra-server-usa.com) for details)

Map projection is UTM Zone 18 NAD 1983 with left 358116 and top 4090148. Pixel size is 14. . Coordinates displayed are Degrees, Minutes, Seconds North and West. Map is currently displayed as 1000 columns by 1000 rows for a total of 1000000 pixels. The map display represents 16000 meters east to west by 16000 meters north to south for a total of 256.0 square kilometers. The map display represents 52502 feet east to west by 52502 feet north to south for a total of 98.8 square miles.

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map assembled 2015-05-05 12:55:50 (qa/qc December 5, 2012 8:04 - tn=652586.1 dist=3218  
I )

\$poi=36.8728333 -76.4902500\$query=select BOVA from  
vafwis\_tables.dbo.cvTierTerrestrial where BOVA in ('040110')

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# **Predicted Habitat (030013) Rattlesnake, canebrake**

36,52,22.2 -76,29,24.9  
is the Search Point

Display Item Location is  
at center not at map center

## **Show Position Rings**

☐ Yes ☒ No  
1 mile and 1/4 mile at the  
Search Point

## **Show Search Area**

☒ Yes ☐ No  
2 Search distance miles  
buffer

Display Search Point is  
at center not at map center

## **Base Map Choices**

Topography ▼

## **Map Overlay Choices**

Current List: Search,  
Observation

## **Map Overlay Legend**

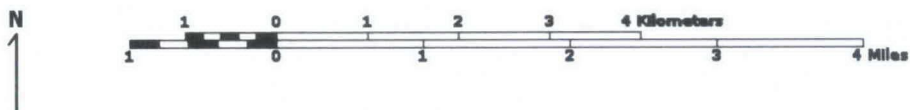
Predicted Habitat  
WAP Tier I & II

Aquatic

Terrestrial

2 mile radius  
Search Area

Data  
Observation Site



Point of Search 36,52,22.2 -76,29,24.9

Map Location 36,52,32.8 -76,30,08.1

Select Coordinate System: ☒ Degrees, Minutes, Seconds Latitude - Longitude

☐ Decimal Degrees Latitude - Longitude

☐ Meters UTM NAD83 East North Zone

☐ Meters UTM NAD27 East North Zone

Base Map source: USGS 1:100,000 topographic maps (see [Microsoft.terraserver-usa.com](http://Microsoft.terraserver-usa.com) for details)



Map projection is UTM Zone 18 NAD 1983 with left 358116 and top 4090148. Pixel size is 14. . Coordinates displayed are Degrees, Minutes, Seconds North and West. Map is currently displayed as 1000 columns by 1000 rows for a total of 1000000 pixels. The map display represents 16000 meters east to west by 16000 meters north to south for a total of 256.0 square kilometers. The map display represents 52502 feet east to west by 52502 feet north to south for a total of 98.8 square miles.

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map assembled 2015-05-05 13:00:20 (qa/qc December 5, 2012 8:04 - tn=652586.1 dist=3218 I)

\$poi=36.8728333 -76.4902500\$query=select BOVA from  
vafwis\_tables.dbo.cvTierTerrestrial where BOVA in ('030013')

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# Species Observations where Falcon, peregrine (040096) observed 608486

36,52,22.2 -76,29,24.9  
is the Search Point

Display Item Location is  
at center not at map center

## Show Position Rings

☐ Yes ☒ No  
1 mile and 1/4 mile at the  
Search Point

## Show Search Area

☒ Yes ☐ No  
2 Search distance miles  
buffer

Display Search Point is  
at center not at map center


## Base Map Choices

Topography

## Map Overlay Choices

Current List: Search,  
Observation

## Map Overlay Legend

 2 mile radius  
Search Area

 Data  
Observation Site



Point of Search 36,52,22.2 -76,29,24.9

Map Location 36,52,32.8 -76,30,08.1

Select Coordinate System: ☒ Degrees, Minutes, Seconds Latitude - Longitude

☐ Decimal Degrees Latitude - Longitude

☐ Meters UTM NAD83 East North Zone

☐ Meters UTM NAD27 East North Zone

Base Map source: USGS 1:100,000 topographic maps (see [Microsoft.terraserver-usa.com](http://Microsoft.terraserver-usa.com) for details)



Map projection is UTM Zone 18 NAD 1983 with left 358116 and top 4090148. Pixel size is 14. . Coordinates displayed are Degrees, Minutes, Seconds North and West. Map is currently displayed as 1000 columns by 1000 rows for a total of 1000000 pixels. The map display represents 16000 meters east to west by 16000 meters north to south for a total of 256.0 square kilometers. The map display represents 52502 feet east to west by 52502 feet north to south for a total of 98.8 square miles.

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map assembled 2015-05-05 13:04:06 (qa/qc December 5, 2012 8:04 - tn=652586.1 dist=3218  
1)

```
$poi=36.8728333 -76.4902500$query=select xy.x,xy.y, xxvy256.Displace_X,  
xxvy256.Displace_Y, cc.High_TE, obs.FeatType from  
vafwis_tables.dbo.vcvSppObs_XY xy join vafwis_tables.dbo.cvSppObs obs on  
obs.obsID = xy.obsID join vafwis_tables.dbo.cvSppObsSite256 s256 on s256.obsID =  
xy.obsID join vafwis_tables.dbo.cvSppObsSitexxvy256 xxvy256 on xxvy256.obsSite256  
= s256.obsSite256 join vafwis_tables.dbo.cvSppObs_CC cc on cc.obsID = xy.obsID  
JOIN vafwis_tables.dbo.udf_List2Table('608486','') list on list.item = obs.obsID
```

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## Anadromous Fish Use Streams

36,52,22.2 -76,29,24.9  
is the Search Point

### Show Position Rings

☒ Yes ☐ No

1 mile and 1/4 mile at the  
Search Point

### Show Search Area

☒ Yes ☐ No

2 Search distance miles  
buffer

Display

at center

Search Point is

not at map center

### Base Map Choices

Topography

### Map Overlay Choices

Current List: Position, Search,  
Anadromous

### Map Overlay Legend

#### Anadromous Fish Reach

Confirmed

Potential

J23 Impediment

Position Rings  
1 mile and 1/4  
mile at the  
Search Point

2 mile radius  
Search Area



Point of Search 36,52,22.2 -76,29,24.9

Map Location 36,52,32.8 -76,30,08.1

Select Coordinate System: ☒ Degrees, Minutes, Seconds Latitude - Longitude

☐ Decimal Degrees Latitude - Longitude

☐ Meters UTM NAD83 East North Zone

☐ Meters UTM NAD27 East North Zone

Base Map source: USGS 1:100,000 topographic maps (see [Microsoft.terraserver-usa.com](http://Microsoft.terraserver-usa.com) for details)

Map projection is UTM Zone 18 NAD 1983 with left 361316 and top 4086948. Pixel size is 14. Coordinates displayed are Degrees, Minutes, Seconds North and West. Map is currently displayed as 600 columns by 600 rows for a total of 360000 pixels. The map display represents 9600 meters east to west by 9600 meters north to south for a total of 92.1 square kilometers. The map display represents 31501 feet east to west by 31501 feet north to south for a total of 35.5 square miles.

Topographic maps and Black and white aerial photography for year 1990+/-



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map assembled 2015-05-05 13:06:29 (qa/qc December 5, 2012 8:04 - tn=652586.0 dist=3218  
I )

\$poi=36.8728333 -76.4902500

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# **Predicted Habitat (040379) Sparrow, Henslow's**

36,52,22.2 -76,29,24.9  
is the Search Point

Display Item Location is  
at center not at map center

## **Show Position Rings**

☒ Yes ☐ No

1 mile and 1/4 mile at the  
Search Point

## **Show Search Area**

☒ Yes ☐ No

2 Search distance miles  
buffer

Display Search Point is  
at center not at map center

## **Base Map Choices**

Topography ▼

## **Map Overlay Choices**


Current List: Position, Search,  
Observation

## **Map Overlay Legend**

**Predicted Habitat  
WAP Tier I & II**

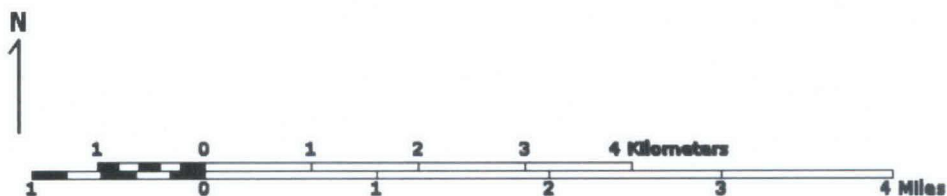
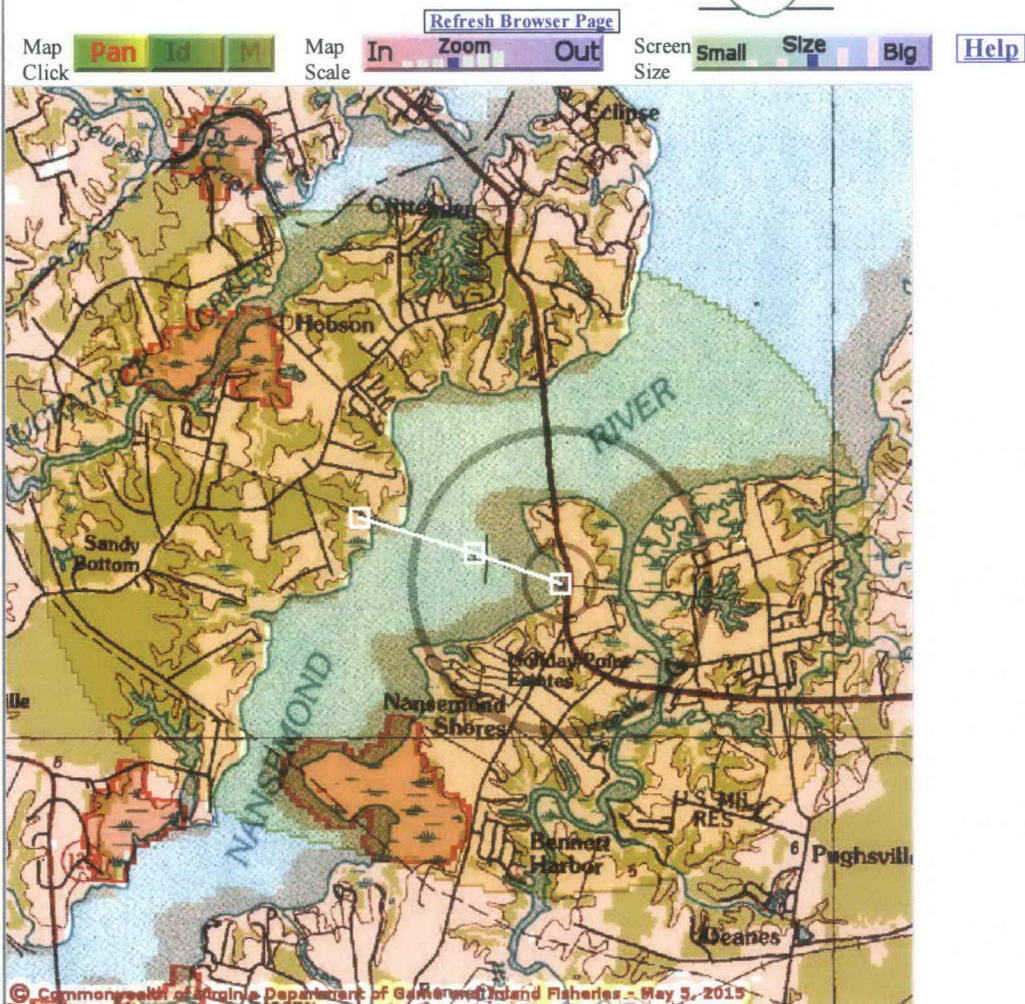
Aquatic

Terrestrial

 **Position Rings**  
1 mile and 1/4  
mile at the  
Search Point

 **2 mile radius  
Search Area**

 **Data  
Observation Site**



Point of Search 36,52,22.2 -76,29,24.9

Map Location 36,52,32.8 -76,30,08.1

Select Coordinate System: ☒ Degrees, Minutes, Seconds Latitude - Longitude

☐ Decimal Degrees Latitude - Longitude

☐ Meters UTM NAD83 East North Zone

☐ Meters UTM NAD27 East North Zone

Base Map source: USGS 1:100,000 topographic maps (see [Microsoft.terraserver-usa.com](http://Microsoft.terraserver-usa.com) for details)

Map projection is UTM Zone 18 NAD 1983 with left 361316 and top 4086948. Pixel size is 14. Coordinates displayed are Degrees, Minutes, Seconds North and West. Map is currently displayed as 600 columns by 600 rows for a total of 360000 pixels. The map display represents 9600 meters east to west by 9600 meters north to south for a total of 92.1 square kilometers. The map display represents 31501 feet east to west by 31501 feet north to south for a total of 35.5 square miles.

Topographic maps and Black and white aerial photography for year 1990+-

are from the United States Department of the Interior, United States Geological Survey.  
Color aerial photography aquired 2002 is from Virginia Base Mapping Program, Virginia  
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map assembled 2015-05-05 13:07:18 (qa/qc December 5, 2012 8:04 - tn=652586.1 dist=3218  
I )

\$poi=36.8728333 -76.4902500\$query=select BOVA from  
vafwis\_tables.dbo.cvTierTerrestrial where BOVA in ('040379')

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# **Predicted Habitat (020044) Salamander, Mabee's**

36,52,22.2 -76,29,24.9  
is the Search Point

Display Item Location is  
at center not at map center

## **Show Position Rings**

☒ Yes ☐ No

1 mile and 1/4 mile at the  
Search Point

## **Show Search Area**

☒ Yes ☐ No

2 Search distance miles  
buffer

Display Search Point is  
at center not at map center

## **Base Map Choices**

Topography ▼

## **Map Overlay Choices**

Current List: Position, Search,  
Observation

## **Map Overlay Legend**

**Predicted Habitat  
WAP Tier I & II**

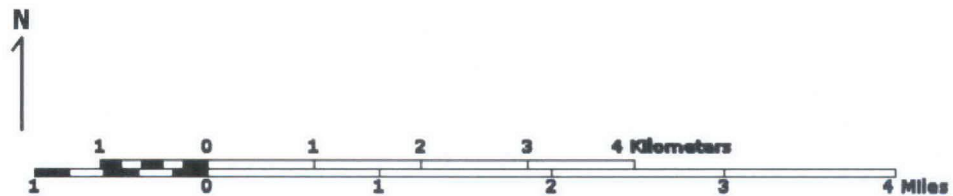
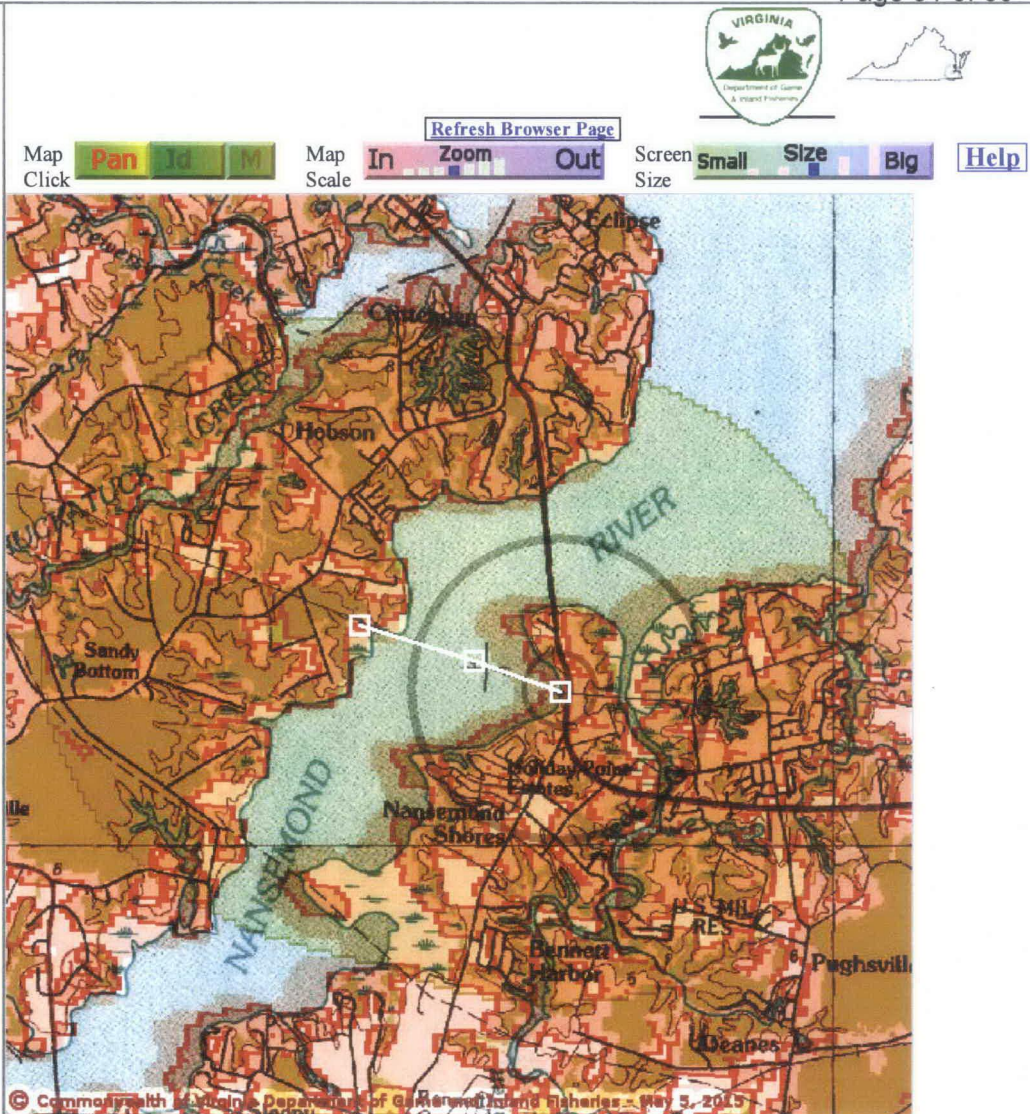
Aquatic

Terrestrial

 Position Rings  
1 mile and 1/4  
mile at the  
Search Point

 2 mile radius  
Search Area

 Data  
Observation Site



Point of Search 36,52,22.2 -76,29,24.9

Map Location 36,52,32.8 -76,30,08.1

Select **Coordinate System**: ☒ Degrees, Minutes, Seconds Latitude - Longitude

☐ Decimal Degrees Latitude - Longitude

☐ Meters UTM NAD83 East North Zone

☐ Meters UTM NAD27 East North Zone

Base Map source: USGS 1:100,000 topographic maps (see [Microsoft.terraserver-usa.com](http://Microsoft.terraserver-usa.com) for details)

Map projection is UTM Zone 18 NAD 1983 with left 361316 and top 4086948. Pixel size is 14. .  
Coordinates displayed are Degrees, Minutes, Seconds North and West. Map is currently displayed  
as 600 columns by 600 rows for a total of 360000 pixels. The map display represents 9600 meters  
east to west by 9600 meters north to south for a total of 92.1 square kilometers. The map display  
represents 31501 feet east to west by 31501 feet north to south for a total of 35.5 square miles.

Topographic maps and Black and white aerial photography for year 1990+-

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Color aerial photography aquired 2002 is from Virginia Base Mapping Program, Virginia  
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map assembled 2015-05-05 13:08:21 (qa/qc December 5, 2012 8:04 - tn=652586.1 dist=3218

I )

\$poi=36.8728333 -76.4902500\$query=select BOVA from  
vafwis\_tables.dbo.cvTierTerrestrial where BOVA in ('020044')

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**3 Bald Eagle Nests**

36,52,22.2 -76,29,24.9  
is the Search Point

**Show Position Rings**

☒ Yes ☐ No

1 mile and 1/4 mile at the  
Search Point

**Show Search Area**

☒ Yes ☐ No

2 Search distance miles  
buffer

Display Search Point is  
at center not at map center




**Base Map Choices**

Topography ▼

**Map Overlay Choices**

Current List: Position, Search,  
BAEANests

**Map Overlay Legend**

-  Position Rings  
1 mile and 1/4  
mile at the  
Search Point
-  2 mile radius  
Search Area
-  Bald Eagle nests  
660 and 330 foot  
management zones



Point of Search 36,52,22.2 -76,29,24.9

Map Location 36,52,32.8 -76,30,08.1

Select Coordinate System: ☒ Degrees, Minutes, Seconds Latitude - Longitude

☐ Decimal Degrees Latitude - Longitude

☐ Meters UTM NAD83 East North Zone

☐ Meters UTM NAD27 East North Zone

Base Map source: USGS 1:100,000 topographic maps (see [Microsoft.terraserver-usa.com](http://Microsoft.terraserver-usa.com) for details)

Map projection is UTM Zone 18 NAD 1983 with left 361316 and top 4086948. Pixel size is 14. Coordinates displayed are Degrees, Minutes, Seconds North and West. Map is currently displayed as 600 columns by 600 rows for a total of 360000 pixels. The map display represents 9600 meters east to west by 9600 meters north to south for a total of 92.1 square kilometers. The map display represents 31501 feet east to west by 31501 feet north to south for a total of 35.5 square miles.

Topographic maps and Black and white aerial photography for year 1990+-



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Color aerial photography aquired 2002 is from Virginia Base Mapping Program, Virginia  
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map assembled 2015-05-05 13:09:34 (qa/qc December 5, 2012 8:04 - tn=652586.1 dist=3218  
I )

\$poi=36.8728333 -76.4902500

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## Natural Heritage Resources

### Your Criteria

Federal Legal Status: Select All

State Legal Status: Select All

Watershed (8 digit HUC): 02080208 - Hampton Roads

Subwatershed (12 digit HUC): JL49 - Nansemond River-Bennett Creek

Search Run: 5/5/2015 12:35:46 PM

Click scientific names below to go to NatureServe report.

Click column headings for an explanation of species and community ranks.

Common Name/Natural Community	Scientific Name	<a href="#">Global Conservation Status Rank</a>	<a href="#">State Conservation Status Rank</a>	<a href="#">Federal Legal Status</a>	<a href="#">State Legal Status</a>	Statewide Occurrences
<b>Hampton Roads</b>						
Nansemond River-Bennett Creek						
REPTILES						
Canebrake	<a href="#">Crotalus</a>	G4T4	S1	None	LE	19
Rattlesnake	<a href="#">horridus</a>					
	<a href="#">[Coastal Plain population]</a>					
VASCULAR PLANTS						
Raven's	<a href="#">Ludwigia ravenii</a>	G1G2	S1	SOC	None	7

Common Name/Natural Community Seedbox	Scientific Name	<a href="#">Global Conservation Status Rank</a>	<a href="#">State Conservation Status Rank</a>	<a href="#">Federal Legal Status</a>	<a href="#">State Legal Status</a>	Statewide Occurrences
---------------------------------------	-----------------	---	--	--------------------------------------	------------------------------------	-----------------------

**Note:** On-line queries provide basic information from DCR's databases at the time of the request. They are NOT to be substituted for a project review or for on-site surveys required for environmental assessments of specific project areas.

**For Additional Information** on locations of Natural Heritage Resources please submit an [information request](#).

**To Contribute information** on locations of natural heritage resources, please fill out and submit a [rare species sighting form](#).





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Project Name: Nansemond River Crossing

Date: 10/16/15

## Species Conclusions Table

### Federal Listed Species

Species / Resource Name	Conclusion	ESA Section 7 / Eagle Act Determination	Notes / Documentation
Northern long-eared bat ( <i>Myotis septentrionalis</i> )  Federal threatened  Source: USFWS IPAC	Suitable habitat may be present, no survey conducted	No effect	<ul style="list-style-type: none"> <li>The project will take place within the cleared transmission line right-of-way and no tree clearing will be required.</li> <li>This bat generally relies on intact interior forest habitat, with low edge-to-interior ratios. Relevant late-successional forest features include a high percentage of old trees, uneven forest structure (resulting in multilayered vertical structure), single and multiple tree-fall gaps, standing snags, and woody debris (Source: Nature Serve).</li> </ul>
Atlantic sturgeon ( <i>Acipenser oxyrinchus</i> )  Federal endangered State endangered  Source: DGIF VAFWIS	Suitable habitat may be present, no survey conducted	May adversely affect	<ul style="list-style-type: none"> <li>Observed downstream from project area at the mouth of the Nansemond River.</li> <li>Although instream work is proposed year-round within the Nansemond River, the river is over one mile wide at this location and work will only take place on 1-2 towers at a time as to not impact a significant portion of the river.</li> <li>This species is found in waters with slow to moderate current and relatively hard water on sand and mixed sand and gravel substrates (Source: Nature Serve).</li> </ul>
Loggerhead sea turtle ( <i>Caretta caretta</i> )  Federal threatened State threatened  Source: DGIF VAFWIS	Suitable habitat may be present, no survey conducted	May adversely affect	<ul style="list-style-type: none"> <li>Observed downstream from project area at the mouth of the Nansemond River.</li> <li>Although instream work is proposed within the Nansemond River, the river is over one mile wide at this location and work will only take place on 1-2 towers at a time as to not impact a significant portion of the river.</li> </ul>
Bald eagle ( <i>Haliaeetus leucocephalus</i> )  Source: DGIF VAFWIS	Unlikely to disturb nesting bald eagles  Does not intersect with bald eagle concentration area	No Eagle Act permit required	-No nests within 660' of the project area and no concentration area present (Source: CCB).
Critical Habitat	-No critical habitat present		-No critical habitat present (Source: Virginia Field Office Critical Habitat Map Tool).

**State Listed Species**

<p>Canebrake rattlesnake (<i>Crotalus horridus</i>)</p> <p>State endangered</p> <p>Source: DCR-DNH</p>	<p>Suitable habitat may be present, no survey conducted</p>	<p>May adversely affect</p>	<ul style="list-style-type: none"> <li>•Based upon the scope of work, no impact to this species or its habitat are expected.</li> <li>•This species prefers mature hardwood forests, mixed hardwood-pine forests, cane thickets, and in the ridges and glades of swampy areas. Areas with numerous logs, significant leaf litter and humus also provide suitable habitat. This species overwinters in the bases of hollow trees and stumps, and in the underground tunnels resulting from stump and root decomposition. This species has also been known to occupy disturbed areas, such as farm fields and cut-overs. Source: DGIF Fact Sheet</li> </ul>
<p>Peregrine falcon (<i>Falco peregrinus</i>)</p> <p>State threatened</p> <p>Source: DGIF VAFWIS</p>	<p>Suitable habitat may be present, no survey conducted</p>	<p>May adversely affect</p>	<ul style="list-style-type: none"> <li>•Observed downstream from project area around the Route 17/ Mills E. Godwin Bridge.</li> <li>•Due to the scope of the project and distance from Mills E. Godwin Bridge, no impacts to this species are anticipated from the proposed project.</li> </ul>



**STAGE I PRE-APPLICATION ANALYSIS FOR THE  
PROPOSED NANSEMOND RIVER CROSSING  
REBUILD, SUFFOLK, VIRGINIA**



Prepared for:

Dominion Virginia Power  
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October 16, 2015

## EXECUTIVE SUMMARY

Stantec Consulting Services Inc. (Stantec), was retained by Dominion Virginia Power (Dominion) to conduct a Stage I Pre-Application Analysis for the proposed Nansemond River Crossing Rebuild project in Suffolk. This analysis was completed in October 2015. Stantec conducted preliminary background research and a field study pursuant to the *Guidelines for Assessing Impacts of Proposed Electric Transmission Lines and Associated Facilities on Historic Resources in the Commonwealth of Virginia* (VDHR 2008) for proposed transmission line improvements.

As detailed by VDHR guidance, consideration was given to: NHL properties located within a 1.5-mile radius of the project centerline; NRHP-listed properties, battlefields, and historic landscapes located within a 1.0-mile radius of the project centerline; NRHP-eligible sites located within a 0.5-mile radius of the project centerline; and archaeological sites located within the project ROW corridor. Ten previously identified architectural and no previously recorded archaeological resources were identified that matched the criteria for consideration detailed in VDHR's guidelines (see below).

The Nansemond River Crossing Rebuild would require the construction of five new towers across the Nansemond River and a single new tower on each terrestrial landing. Once the new towers were in place the existing towers will be dismantled and removed. The existing towers and associated hardware were originally constructed in 1968 and are proposed to be replaced as they are approaching the end of their design life and have experienced significant degradation due to their location in a tidal, saltwater environment.

### **Recommendations - Architectural Resources**

There are 23 previously identified architectural resources located within a 1.5-mile radius of the project centerline for this project. No NHL-listed architectural resources are located within the 1.5-mile buffer, and no NRHP-listed resources, Battlefields or Historic Landscapes were identified within the 1.0-mile buffer. A single eligible resource is located within the 0.5-mile buffer and is the Town Point Farm (VDHR #133-0242). Town Point Farm is located approximately 0.25-miles from the proposed corridor. ***Because the proposed rebuild is consistent with the transmission line which is currently in place, it is recommended that the rebuild would have a minimal visual effect to Town Point Farm (VDHR #133-0242).***

In addition to the resources identified within the VDHR'S VCRIS system, research indicated that a portion of the Captain John Smith Chesapeake National Historic Water Trail is located within the APE for this project. While not a traditionally documented historic resource, the trail has been identified recently as a potential historic resource and is therefore noted here and considered as part of this assessment. ***Because the proposed rebuild is consistent with the transmission line which is currently in place, it is recommended that the rebuild would have a minimal visual effect to the Captain John Smith Chesapeake National Historic Trail. It is anticipated that the project would have a minimal direct effect to the Captain John Smith Chesapeake National Historic Trail.***

Previously Recorded Architectural Resources Considered within the Stage I Pre-Application Process				
VDHR #	Resource Name	VDHR/NRHP Status	Distance to Line (feet)	Impact
133-0242	Town Point Farm, 2725 Bridge Road	Determined Eligible for Listing on the NRHP by VDHR 2001	1320	Minimal
N/A	Captain John Smith Chesapeake National Historic Trail	N/A	0.0	Minimal

No previously identified archaeological resources are located either within or immediately adjacent to the project ROW corridor or proposed access roads; however, ***it is recommended that an underwater archaeological survey should be performed as well as an archaeological survey of the two terrestrial new tower locations and any proposed access road not on existing roadway to cover all areas that will be directly impacted by construction.***

## TABLE OF CONTENTS

EXECUTIVE SUMMARY .....	I
TABLE OF CONTENTS .....	III
LIST OF FIGURES .....	IV
LIST OF TABLES .....	IV
1.0 INTRODUCTION.....	1
1.1 OVERVIEW .....	1
1.2 NANSEMOND RIVER CROSSING .....	1
1.3 STAGE I PRE-APPLICATION ANALYSIS.....	4
2.0 BACKGROUND RESEARCH.....	5
<b>2.1.1 Methodology</b> .....	5
<b>2.1.2 Results of the Background Research</b> .....	5
3.0 STAGE I PRE-APPLICATION ANALYSIS RESULTS .....	11
3.1 ARCHITECTURAL FIELD WORK METHODOLOGY .....	11
3.2 INDIVIDUAL ARCHITECTURAL RESOURCES .....	11
<b>3.2.1 Town Point Farm (VDHR #133-0242)</b> .....	11
<b>3.2.2 Captain John Smith Chesapeake National Historic Water Trail</b> .....	17
<b>3.2.3 Archaeological Sites within the ROW Corridor</b> .....	18
4.0 CONCLUSIONS .....	18
4.1 OVERVIEW .....	20
4.2 RECOMMENDATIONS .....	20
<b>4.2.1 Architectural Resources</b> .....	20
<b>4.2.1 Archaeological Resources</b> .....	21
5.0 REFERENCES .....	22

## LIST OF FIGURES

Figure 1. Location of Project Limits on Aerial Photography.....	2
Figure 2. Detail of Aerial Photography Depicting Previously Recorded Architectural Resources Under Consideration within the Stage 1 Pre-Application Process.....	7
Figure 3. Detail of Aerial Photography Depicting Previously Recorded Archaeological Resources in Proximity to the ROW and Access Road. ....	9
Figure 4. Detail of Aerial Photography Depicting Previously Recorded Archaeological Site 44SK0172 in Proximity to the ROW.....	10
Figure 5. View to the Northwest down the Entry Drive to Town Point Farm (VDHR #133-0242). ....	12
Figure 6. View to the Northwest of the Barn Complex and Gated Entry (VDHR #133-0242). ....	12
Figure 7. View from the Front Gate of Town Point Farm toward Tower 223/183 and 223/184 and the Existing Transmission Line Corridor, View to the Southwest (Photo Location 1). ....	14
Figure 8. View from the Nansemond River of Towers 223/183 and 223/184 and Town Point Farm (VDHR #133-0242) (Photo Location 2). Replacement structures will be identical to these, but on slightly taller foundations.....	15
Figure 9. Detail of Aerial Photography Depicting Photo Locations and Current Conditions for Town Point Farm (VDHR #133-0242) and the Captain John Smith Chesapeake National Historic Trail.....	16
Figure 10. View of the Existing Nansemond River 230 kV Transmission Line Crossing from within the River and the Captain John Smith Chesapeake National Historic Trail. View to the Northwest (Photo Location 4).....	18
Figure 11. View of The transmission Line Crossing the River and the Captain John Smith Chesapeake National Historic Trail from the Eastern Bank of the Nansemond River to the West (Photo Location 3). ....	19

## LIST OF TABLES

Table 1. Study Areas as Defined by VDHR Guidelines for Transmission Lines .....	5
Table 2. Previously Recorded Architectural Resources Considered within the Stage I Pre-Application Process.....	6

## **1.0 INTRODUCTION**

### **1.1 OVERVIEW**

Stantec Consulting Services Inc. (Stantec) was retained by Dominion Virginia Power (Dominion) to conduct a Stage I Pre-Application Analysis for the proposed Nansemond River Crossing Rebuild project in Suffolk. This analysis was completed in October 2015. Stantec conducted preliminary background research and a field study pursuant to the *Guidelines for Assessing Impacts of Proposed Electric Transmission Lines and Associated Facilities on Historic Resources in the Commonwealth of Virginia* (VDHR 2008) for proposed transmission line improvements.

Dominion Virginia Power (Dominion) is proposing to rebuild an existing 230 kV overhead transmission line (Line 223/226) crossing of the Nansemond River approximately one mile upstream of the Route 17/ Mills E. Godwin Bridge in Suffolk, Virginia, shown in Figure 1. The Nansemond River Crossing Rebuild would require the construction of five new towers across the Nansemond River and a single new tower on each terrestrial landing. Once the new towers were in place the existing towers will be dismantled and removed. The existing towers and associated hardware were originally constructed in 1968 and are proposed to be replaced as they are approaching the end of their design life and have experienced significant degradation due to their location in a tidal, saltwater environment.

The crossing consists of five towers within the River and stretches approximately 1.3 miles between the Hobson and Bennett's Creek Landing areas of Suffolk. The western terminus of the project area can be reached by way of Route 628/Crittenden Road and the eastern terminus can be reached via Route 17/ Bridge Road (Figure 1).

### **1.2 NANSEMOND RIVER CROSSING**

The proposed project includes replacement of the five existing support towers within the Nansemond River, the first terrestrial tower on either side of the river, conductor wire and static lines, as well as the installation of construction access roads to access the transmission line right-of-way (ROW).

As designed, the proposed crossing will span a total of 6,900 linear feet (LF) from mean low water (MLW) to MLW and include the installation of five steel lattice towers within the Nansemond River (Towers 223/187-223/183). New conductor wire will span between towers 223/188 - 223/181 and new static wire will span towers 223/189 - 223/180. All five towers within the river will maintain the same configuration and use the same type of steel lattice tower, whereas terrestrial towers 223/188 and 223/182 will be replaced with monopoles. The new riverine towers will be the same height as the existing towers (188-243 feet); however, there will be an overall height increase of 5 to 10 feet for each tower due to taller foundations. Taller foundations are required for the new towers to account for a rise in sea level and increase in storm surge. The new line is proposed to be offset approximately 65 feet upstream from the existing towers and remain within the existing 175 feet wide easement.

The river towers will feature two sizes of towers: type N1 will be used on the four smaller towers, while type D2RCT will be used on the tallest tower, 223/186. Tower 223/186 is located immediately west of



Figure No.

1

Title

# Location of the Project Limits

Client/Project

Dominion Virginia Power

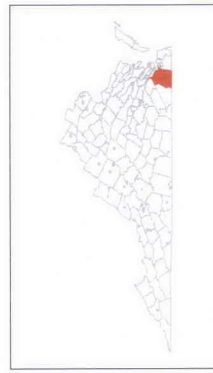
Project Location

203400527  
Prepared by: 1945 on 2015-10-14  
Technical Review by: A.J. on 2015-10-14  
Interpretation Review by: J.M. on 2015-10-14  
Browns Hill



## Legend

Project Limits



## Note

1. Coordinate system: NAD 1983 StatePlane Virginia South FIPS 4502 feet
2. Orthorectified Bing Maps



Map is courtesy of USGS @ 2416 Maresca, Calapesta, Image courtesy of USGS @ 2416 Maresca, Calapesta

bing

the main river channel and requires a larger tower and foundation due to its height to maintain adequate clearance (Appendix A). The four type N1 towers are expected to feature a foundation system that will consist of 4-5 piles per leg, for a maximum possible total of 20 piles per tower. The single type D2RCT tower will require 5-6 piles per tower leg due to its size. Towers and foundations are expected to be constructed from barge work platforms. Each 24-inch steel pile will be vibratory or impact driven into the river bottom to the required design depth. Piles will be encased with a 2-piece fiberglass sleeve that will be jetted into the River bottom to a depth of approximately 4 FT. The 25-inch sleeve will be back filled with grout to be tremmied from a barge. Although a marine epoxy grout specifically designed to be used in aquatic environments will be used, the fiberglass sleeve will seal the pile and grout to prevent and minimize the release of grout into the surrounding water. Direct impacts to the river bottom equal approximately 68 square feet (SF) and 82 SF per tower, depending on the type, for a total of 354 SF.

Individual concrete caps will then be constructed on top of the piles comprising each leg of the tower. The four type N1 towers will have concrete caps on each leg that measure approximately 7 FT x 7 FT, while the concrete caps on the type D2RCT tower will measure approximately 13 FT x 13 FT. The caps are expected to be range from 6.5 FT to 13.5 FT above mean high water (MHW) dependent upon the results of the storm surge wave height study. Sealed forms will be used to construct the caps so that there is no discharge of concrete to the water below. The four N1 towers will have a base that measures 47 FT x 47 FT for a total encroachment over state-owned subaqueous bottom of 2,209 SF per tower. The type D2RCT tower will have a base measuring 56.5 FT x 56.4 FT for a total encroachment of approximately 3,193 SF.

Once the new crossing is in place, the existing crossing will be removed. Barges will be used to dismantle the existing towers section by section from the top down and the existing piles are proposed to be removed completely through the use of a vibratory action. If a situation arises where the full pile is not able to be removed, the pile will be left in place and cut off approximately 2-4 feet below mudline using hydraulic sheers or diver and torch.

The terrestrial portion of the project involves the replacement of the first landward tower on either side of the river crossing (towers 223/188 and 22/181), as well as the installation of construction access roads. The two lattice towers on either side of the river are proposed to be replaced with a single steel monopole. Large equipment will be required to access the two towers proposed for replacement, including the use of wheeled or tracked cranes, flat bed tractor trailers, dump trucks, and cement trucks, as well as smaller vehicles such as pick-up trucks, bucket trucks and all-terrain vehicles. Construction access will generally be provided through existing roads at either terminus of the crossing. The proposed access routes have been located outside of wetland features where practicable and can avoid tidal wetlands all together. Within the ROW, timber mats will be used to cross wetland areas to avoid impacts to these features.

The existing transmission line ROW measures approximately 175 feet and the entire width is currently cleared and maintained for existing transmission facility operation. All work will take place within the existing ROW and no new ROW is required for the proposed project.

### 1.3 STAGE I PRE-APPLICATION ANALYSIS

The Guidelines for Assessing Impacts of Proposed Electric Transmission Lines and Associated Facilities on Historic Resources in the Commonwealth of Virginia (VDHR 2008) were developed by VDHR to assist the State Corporation Commission (SCC) and their applicants to address and minimize potential impacts to historic resources associated with the construction of large scale transmission lines and associated facilities. In consideration to the general project design, as described above, and other elements associated with the proposed undertaking, including current ROW conditions within the proposed project area, Stantec designed the present study to identify all previously recorded architectural and archaeological resources requiring inclusion in a formal Stage I Pre-Application Analysis, as defined by the *Guidelines for Assessing Impacts of Proposed Electric Transmission Lines and Associated Facilities on Historic Resources in the Commonwealth of Virginia* (VDHR 2008).

Traditional photo simulations have not been provided for this project for several reasons. The existing towers associated with the Nansemond River Crossing are within 10 feet of the proposed final height of the replacement towers. The replacement towers, as noted above are the same height of the existing structures, however the need for new taller foundations will result in an overall total increase in height for the crossing of 5 to 10 feet. Therefore, photographs of the existing towers from accessible locations in the vicinity of the resources under consideration are sufficient to simulate the potential visual effect of the proposed project on historic resources. The terrestrial tower located on the eastern bank of the Nansemond River will increase in height by approximately 20 feet and is proposed as a monopole structure. Although this one structure will be substantially taller, the estimation of visibility based on the existing line is considered applicable.

As detailed by VDHR guidance, consideration was given to: NHL properties located within a 1.5-mile radius of the project centerline; NRHP-listed properties, battlefields, and historic landscapes located within a 1.0-mile radius of the project centerline; NRHP-eligible sites located within a 0.5-mile radius of the project centerline; and archaeological sites located within the project ROW corridor. One previously identified architectural and no previously recorded archaeological resources were identified that matched the criteria for consideration detailed in VDHR's guidelines. In addition, consideration was given to the presence of the Captain John Smith Chesapeake National Historic Trail. Since the study was completed prior to filing an SCC application, all digital images were taken from public right-of-way and/or Dominion Virginia Power property.

The current Stage I Pre-Application Analysis project was directed by Senior Principal Investigator Ellen Brady. Principal Investigator Aimee Leithoff co-authored the report with Ms. Brady. Architectural Historian Sandra DeChard assisted with the visual analysis and provided quality control reviews. Photographs of the transmission line from the river and within the Dominion ROW were provided by Stantec environmental staff and utilized in this analysis. Donald Sadler conducted the field review and field photographs. GIS Technician Sean Sutor prepared the report graphics and project maps.

## 2.0 BACKGROUND RESEARCH

As part of the Stage I Pre-Application Analysis effort, VDHR guidance recommends a four-tier study area strategy to be considered for each alternative alignment for the proposed undertaking (Table 1). Per this guidance consideration was given to: NHL properties located within a 1.5-mile radius of the project centerline; NRHP-listed properties, battlefields, and historic landscapes located within a 1.0-mile radius of the project centerline; NRHP-eligible sites located within a 0.5-mile radius of the project centerline; and archaeological sites located within the project ROW corridor.

Table 1. Study Areas as Defined by VDHR Guidelines for Transmission Lines	
Radial Buffer (in miles)	Considered Resources
1.5	National Historic Landmarks
1.0	Above resources and: National Register Properties (listed), Battlefields, Historic Landscapes (e.g. Rural HD)
0.5	Above resources and: National Register-eligible (as determined by VDHR)
0.0 (Within ROW)	Above resources and Archaeological Sites

### 2.1.1 Methodology

The background research included a review of the VDHR archives and of data collected from the VDHR Virginia Cultural Resources Information System (V-CRIS), using the most current data as provided by the VDHR. The VDHR files of archaeological sites and historic structures were examined and information was retrieved on all archaeological sites located up to a 0.5-mile radius of the project area and all previously recorded architectural resources up to a 1.5-mile radius of the project corridor. ESRI ArcGIS Online aerial photography of current conditions was examined for the entire study area. Photographs of each of the architectural resources under consideration, if visible, as well as their view sheds were taken from the public ROW.

### 2.1.2 Results of the Background Research

#### 2.1.2.1 Architectural Resources

There are 23 previously identified architectural resources located within a 1.5-mile radius of the project centerline for this project. No NHL-listed architectural resources are located within the 1.5-mile buffer, and no NRHP-listed resources, Battlefields or Historic Landscapes were identified within the 1.0-mile buffer. A single eligible resource is located within the 0.5-mile buffer and is the Town Point Farm (VDHR #133-0242). Town Point Farm is located approximately 0.25-miles from the proposed corridor (Figure 2; Table 2).

In addition to the resources identified within the VDHR'S VCRIS system, research indicated that a portion of the Captain John Smith Chesapeake National Historic Water Trail is located within the APE for this project. While not a traditionally documented historic resource, the trail has been identified recently as a potential historic resource and is therefore noted here and considered as part of this assessment. Additional coordination with the VDHR and the National Park Service may be warranted when assessing this resource.

The Captain John Smith Chesapeake National Historic Trail was designated by Congress in 2006 through an amendment to Section 5(a) of the National Trails System Act (16 U.S.C. 1244(a)) and is the first nationally designated water trail under the Act. The trail route extends throughout the Chesapeake Bay and includes tributaries explored by Smith (Appendix B). The Trail was further extended into four additional rivers considered as historic components of the Trail by the Secretary of the Interior in May 2012.

**Table 2. Previously Recorded Architectural Resources Considered within the Stage I Pre-Application Process**

VDHR #	Resource Name	VDHR/NRHP Status	Distance to Line (feet)
133-0242	Town Point Farm, 2725 Bridge Road	Eligible VDHR 2011	0.25 miles
N/A	Captain John Smith Chesapeake National Historic Trail	N/A	0.0

#### 2.1.2.1 Archaeological Resources

No previously identified archaeological resources are located within the project ROW corridor or proposed access road. A single site, 44SK0172, is located approximately 95 feet to the north of the corridor on the eastern land-based section; however it is located within subdivision and appears to have been destroyed. In addition, the site is not located in the vicinity of any planned construction activities (Figures 3-4).



Figure No.

2

Title

# Eligible Resources within a 1.5-Mile Radius of the Project Limits

Client/Project

Dominion Virginia Power

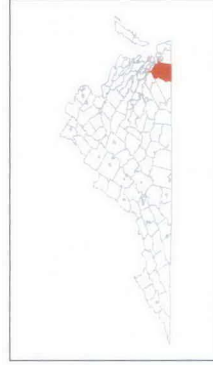
Project Location 203400227

County: Isle of Wight, Suffolk  
Prepared by: SWI on 2015-10-14  
Technical Review by: A.J. on 2015-10-14  
Independent Review by: EOB on 2015-10-14  
Brenn's Hill



## Legend

- Project Limits
- Architectural Resources
- 0.5 mi. buffer
- 1 mi. buffer
- 1.5 mi. buffer

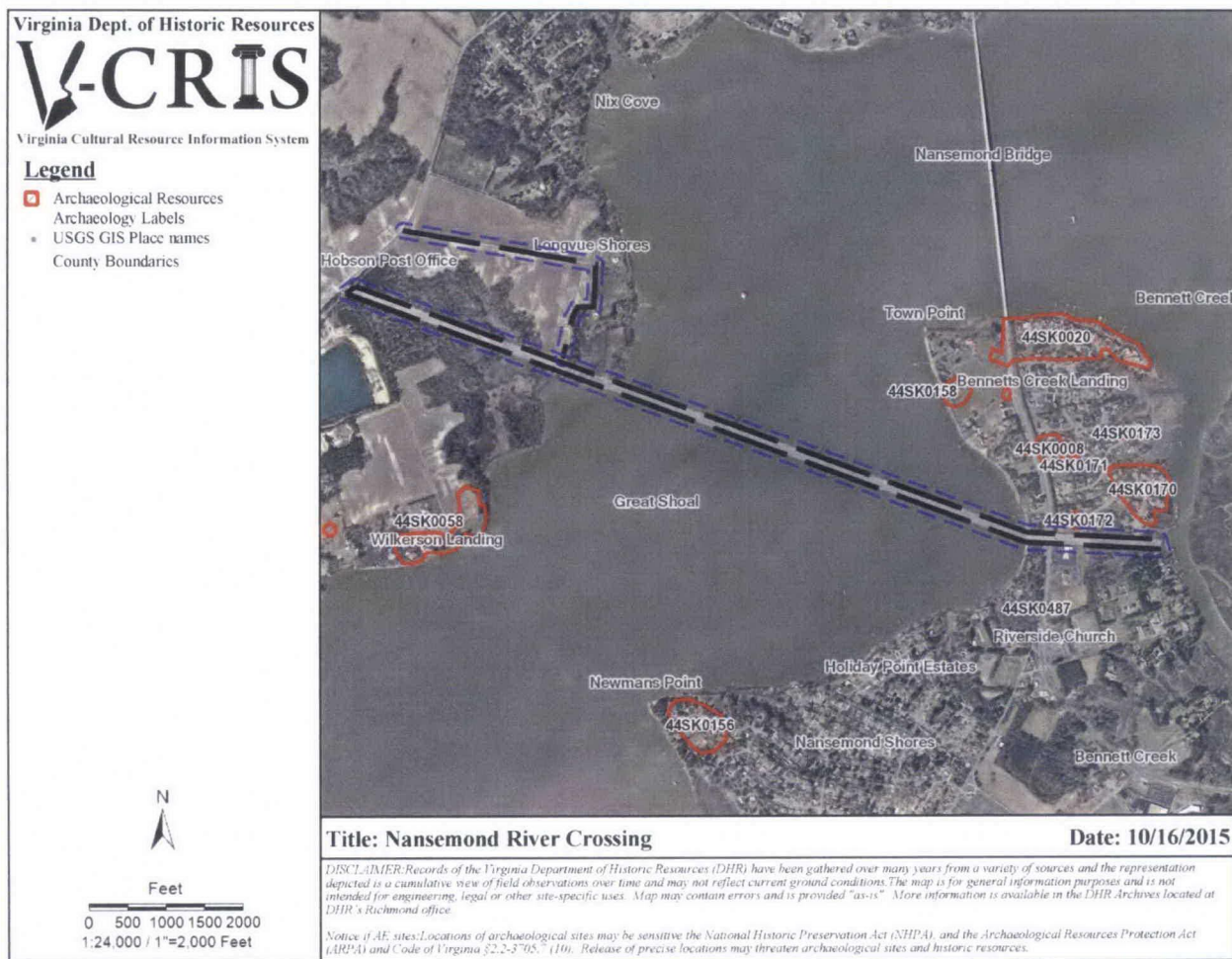


## Notes

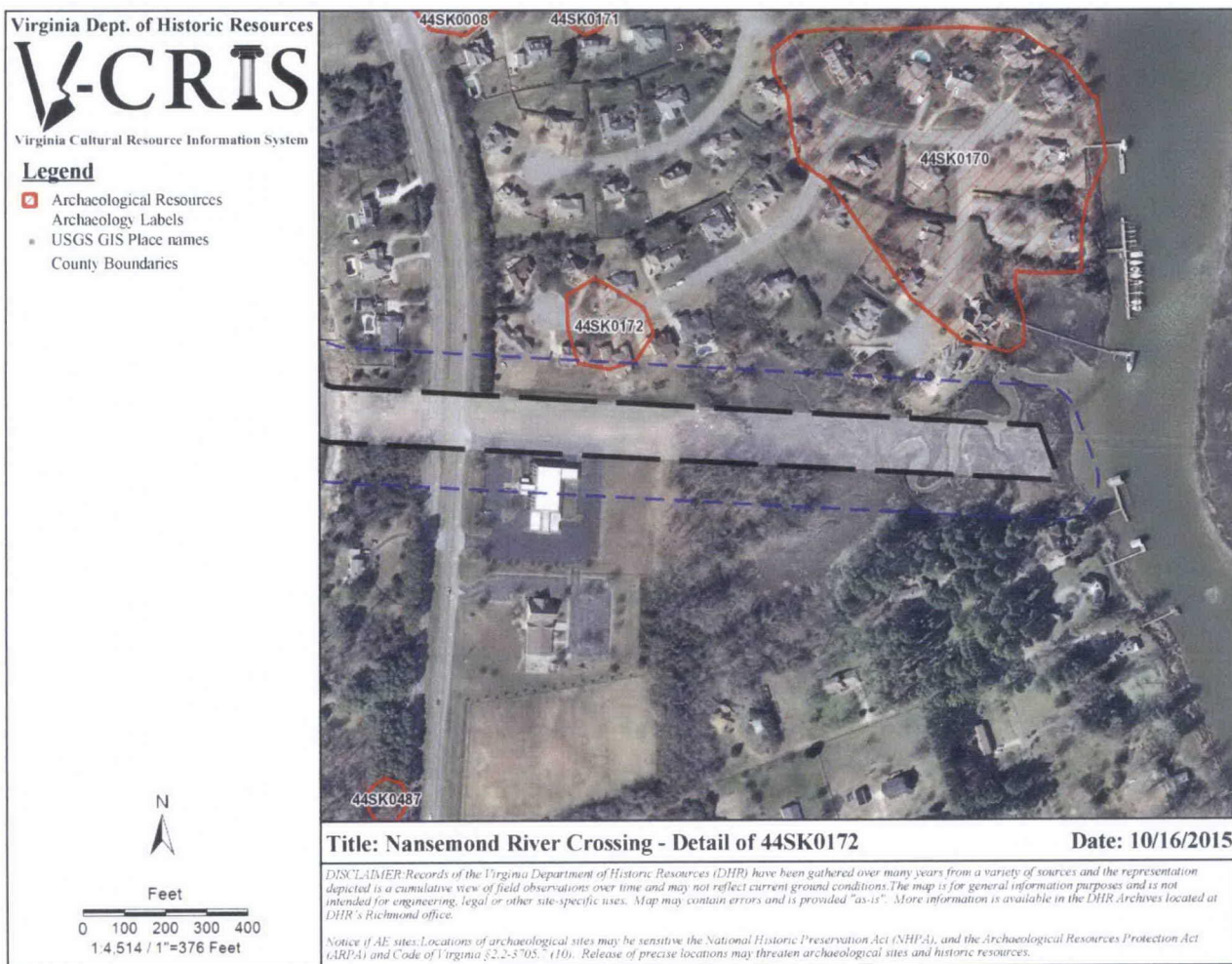
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2. Orthorectified Bing Maps







**Figure 3. Detail of Aerial Photography Depicting Previously Recorded Archaeological Resources in Proximity to the ROW and Access Road.**



**Figure 4. Detail of Aerial Photography Depicting Previously Recorded Archaeological Site 44SK0172 in Proximity to the ROW.**

## **3.0 STAGE I PRE-APPLICATION ANALYSIS RESULTS**

### **3.1 ARCHITECTURAL FIELD WORK METHODOLOGY**

Fieldwork for the proposed transmission line project, under the direction of Senior Architectural Historian, Sandra DeChard, was undertaken by Donald Sadler on October 15, 2015. Additional photos of the project taken from the Nansemond River and within the transmission line ROW were taken by Stantec staff on September 15, 2015. The fieldwork for the view shed analysis entailed photographing the resource requiring visual assessment according to the Stage I Pre-Application review process and examining the potential views from the resource towards the proposed transmission line improvements. Since the fieldwork was conducted prior to a formal SCC application submittal, all photographs were taken from public ROW locations with aerial photography utilized to supplement the analysis of project visibility and potential visual effects. As the proposed line is a rebuild of an existing transmission line and the proposed new line, with the exception of a single tower, will generally only change in height from the existing conditions by 5 to 10 feet, the existing line was utilized to determine potential visual effects.

### **3.2 INDIVIDUAL ARCHITECTURAL RESOURCES**

#### **3.2.1 Town Point Farm (VDHR #133-0242)**

##### **3.2.1.1 Resource Description and Current Conditions**

Town Point Farm is location on the west side of Bridge Road (Route 17). The property consists of a ca. 1895 house situated on an approximately 17-acre parcel away from Bridge Road surrounded by a mowed lawn with mature trees and landscaping bordered by the Nansemond River to the north and west and Bridge Road to the east. Facing south, the main house is set on a fairly level grade with rolling topography that slopes to the north and west toward the Nansemond River. Two brick pillars with a black metal gate mark the entrance to the property from Bridge Road. A long, single lane, asphalt driveway leads from Bridge Road past a row of outbuildings to the main house. Ornamental Trees are located along the road. From the main house, the driveway turns south and leads to two houses south of the complex. Outbuildings on the property include one garage, one kitchen, one lean-to, one corncrib, one hay barn, one barn, one animal pen, one shed, one chicken house, one swimming pool, one pier, and one office building associated with this building (VDHR Site Files). Town Point Farm was determined eligible by VDHR in 2001 (Figures 5-6).





Figure 5. View to the Northwest down the Entry Drive to Town Point Farm (VDHR #133-0242).



Figure 6. View to the Northwest of the Barn Complex and Gated Entry (VDHR #133-0242).

### 3.2.1.2 Transmission Line Details and Construction

Proposed construction associated with Nansemond River Crossing Rebuild would include the replacement of the five towers in the river and two terrestrial towers (one on each side of the river) (Table 3). Towers crossing the Nansemond River will be the same configuration as what is existing, and the two land-based towers will be replaced with monopoles. River crossing towers will be increase in height by 5 to 10 feet due to increased concrete bases. Tower 223/182, located on the eastern bank of the Nansemond River will increase in height approximately 20 feet. The existing lattice tower will be replaced by a monopole (see Appendix A).

- Rebuild of Terrestrial Towers - 223/188 and 223/182 – Existing lattice towers will be replaced by monopole towers (Table 3; Appendix A).
- Five River Towers - Towers 223/187-223/183 – will be replaced. Because the line cannot be de-energized, a new line will be built and once complete, the old line will be removed (Table 3; Appendix A).

Table 3. Nansemond River Crossing 230 kV Segment (LINE 223/226)					
Structure	Existing Structure Type	Existing Height (Ft)	Proposed Work	Proposed Structure Type	Proposed Height (Ft)
223/182 (land-based)	Lattice	141.5	Rebuild New Location	Monopole	161.5
223/183 (river)	Lattice	188	Rebuild New Location	Lattice	193
223/184 (river)	Lattice	190	Rebuild New Location	Lattice	193
223/185 (river)	Lattice	190	Rebuild New Location	Lattice	193
223/186 (river)	Lattice	243.25	Rebuild New Location	Lattice	253.25
223/187 (river)	Lattice	191	Rebuild New Location	Lattice	193
223/188 (land-based)	Lattice	130	Rebuild New Location	Monopole	131.50

### 3.2.1.3 Visual Effects Assessment

Currently an existing transmission line corridor, including terrestrial as well as riverine components is within the view shed of the Town Point Farm. The closest point from the boundary of the resource to the existing and proposed transmission line corridor is 0.25 mile. This point is located at the southwestern resource boundary. Distances from the main dwelling on the property to the river crossing towers range from 0.39-mile to the eastern-most river-based tower and 0.8-mile to the far western river-based tower. The landside tower located on the east bank of the river is approximately 0.54-mile almost due south of the main dwelling. Because of the location and proximity of the resource to the transmission line, all seven towers associated with the rebuild would be visible from points on the property. Photographs taken from the accessible points on the property and along the Route 17 corridor indicate that the river towers are visible from the



resource driveway to the south across the open fields and would suggest that towers and line would be visible from other portions of the resource parcel as well as the main dwelling (Figures 7-8). Views from the barns may be shielded somewhat by trees present around the dwelling, however, some visibility would be likely. However, it is clear from a review of aerial photography that the existing and proposed towers would be visible from the main resource (Figure 9).

Because there is an existing transmission line corridor which will be replaced with identical structures of similar heights, the visibility of the proposed transmission line rebuild to Town Point Farm would be nearly identical to that which is currently present. The increase in heights of the river towers, which is limited to a maximum of 10 feet, will not be significantly noticeable and would not result in a significant change over the existing conditions. Tower 223/182, the land-based structure on the eastern bank of the Nansemond River will increase in height by approximately 20 feet; however the monopole design will be less intrusive than the existing lattice tower. Additional towers within the ROW and in proximity to the resource will not be replaced or altered. ***Because the proposed rebuild is consistent with the transmission line which is currently in place, it is recommended that the rebuild would have a minimal visual effect to Town Point Farm (VDHR #133-0242).***

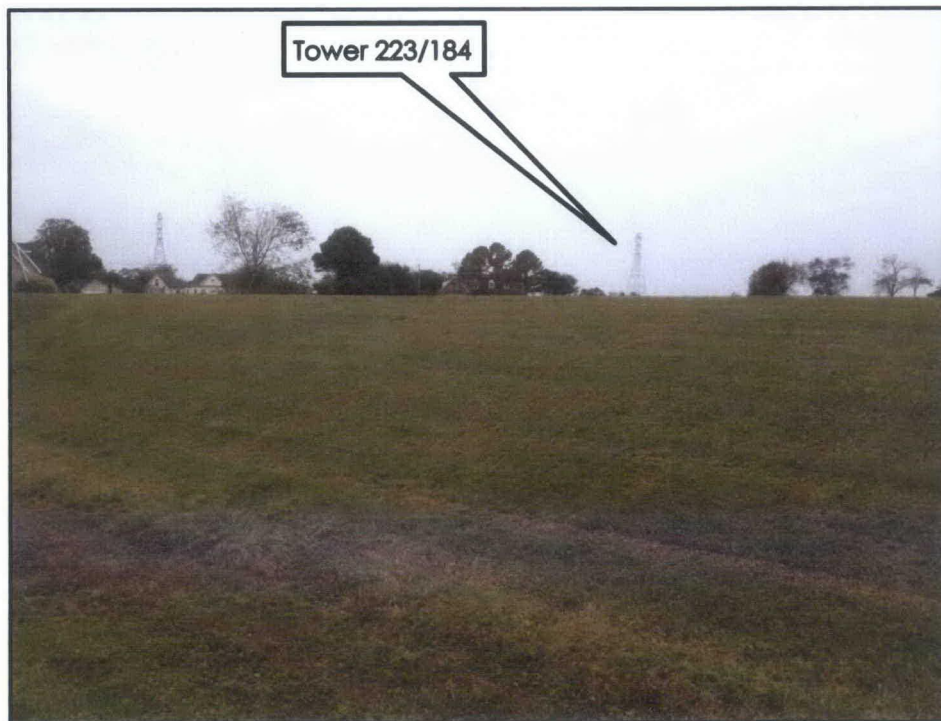
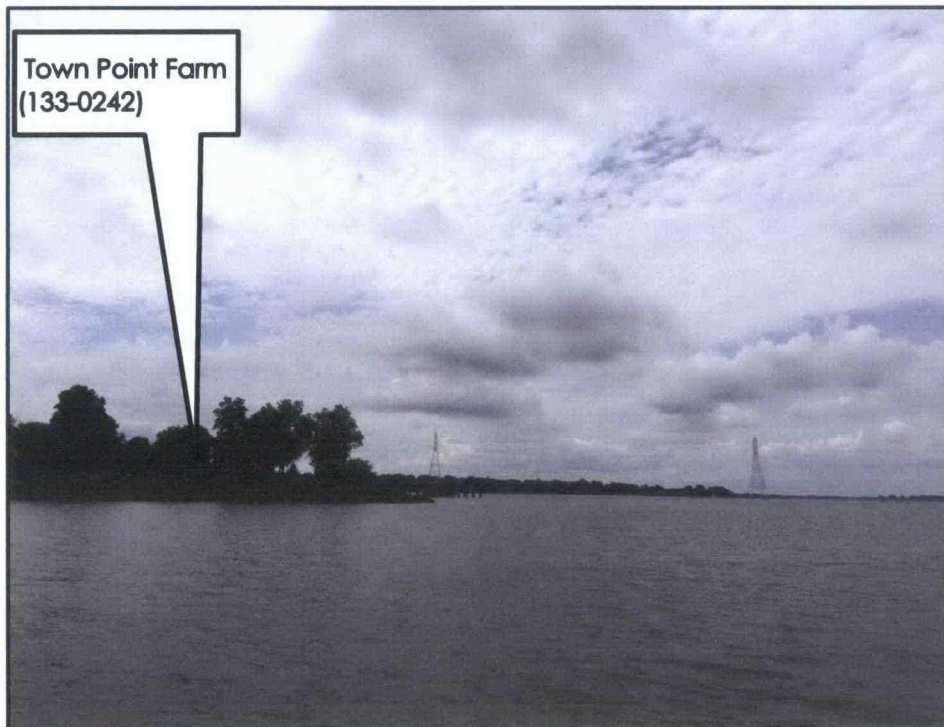
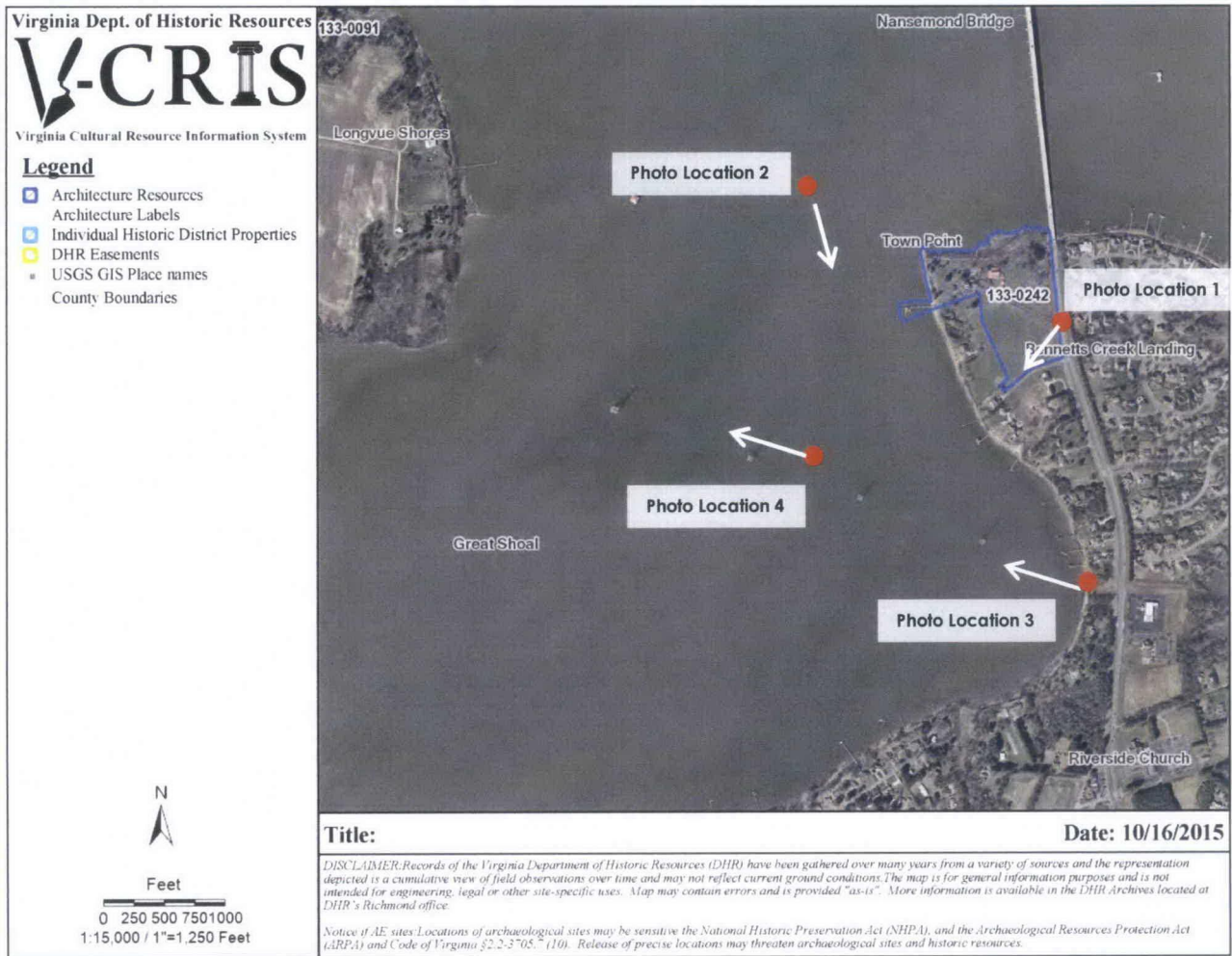


Figure 7. View from the Front Gate of Town Point Farm toward Tower 223/183 and 223/184 and the Existing Transmission Line Corridor, View to the Southwest (Photo Location 1).





**Figure 8. View from the Nansemond River of Towers 223/183 and 223/184 and Town Point Farm (VDHR #133-0242) (Photo Location 2). Replacement structures will be identical to these, but on slightly taller foundations.**



**Figure 9. Detail of Aerial Photography Depicting Photo Locations and Current Conditions for Town Point Farm (VDHR #133-0242) and the Captain John Smith Chesapeake National Historic Trail.**

### **3.2.2 Captain John Smith Chesapeake National Historic Water Trail**

#### **3.2.2.1 Resource Description and Current Conditions**

The Captain John Smith Chesapeake National Historic Trail encompasses over 3,000 miles of waterway associated with the voyages of John Smith as well as early explorations of the Chesapeake Bay region. With regards to the current project, the Nansemond River is identified as related to "Smith Voyage 2" (Appendix 2). However, the portion of the trail associated with this section of the Nansemond River is not identified as a high potential route; is not identified as having associated sites (voyage stops, seventeenth century Native American sites, cross sites) within the project ROW and APE; and contains only small areas noted as having a landscape generally evocative of the seventeenth century. Photographs of the transmission line from the river are provided in Figures 11-12 and illustrate the current conditions within this portion of the trail. Residential development is present but sparse in the vicinity of the project area, however to the north large residential subdivisions are present along the Route 17 corridor and flanking the riverbanks.

#### **3.2.2.2 Transmission Line Details and Construction**

Proposed construction associated with Nansemond River Crossing Rebuild would include the replacement of the five towers in the river and two terrestrial towers (one on each side of the river) (see Table 3; Section 3.2.1.2). Towers crossing the Nansemond River will be the same configuration as what is existing, and the two land-based towers will be replaced with monopoles. River crossing towers will be increased in height by 5 to 10 feet due to taller concrete bases. Tower 223/182, located on the eastern bank of the Nansemond River will increase in height approximately 20 feet. The existing lattice tower will be replaced by a monopole (Appendix A).

- Rebuild of Terrestrial Towers - 223/188 and 223/182 – Existing lattice towers will be replaced by monopole towers (Table 3; Appendix A).
- Five River Towers - Towers 223/187-223/183 – will be replaced. Because the line cannot be de-energized, a new line will be built and once complete, the old line will be removed (Table 3; Appendix A).

#### **3.2.2.3 Effects Assessment**

Because there is an existing transmission line corridor which will be replaced with identical structures of similar heights, the visibility of the proposed transmission line rebuild to Town Point Farm would be nearly identical to that which is currently present. The increase in heights of the river towers, which is limited to a maximum of 10 feet, will not be significantly noticeable and would not result in a significant change over the existing conditions. Tower 223/182, the land-based structure on the eastern bank of the Nansemond River will increase in height by approximately 20 feet; however the monopole design will be less intrusive than the existing lattice tower. Additional towers within the ROW and in proximity to the resource will not be replaced or altered. ***Because the proposed rebuild is consistent with the transmission line which is currently in place, it is recommended that the rebuild would have a minimal visual effect to the Captain John Smith Chesapeake National Historic Trail.***

In addition to visual effects, because the proposed transmission line construction would be conducted within the river and within the identified historic water trail, an assessment of direct effect to include potential underwater archaeological survey may be warranted. However, the current assessment has not identified direct effects that would negatively affect the water trail.

***It is anticipated that the project would have a minimal direct effect to the Captain John Smith Chesapeake National Historic Trail.***

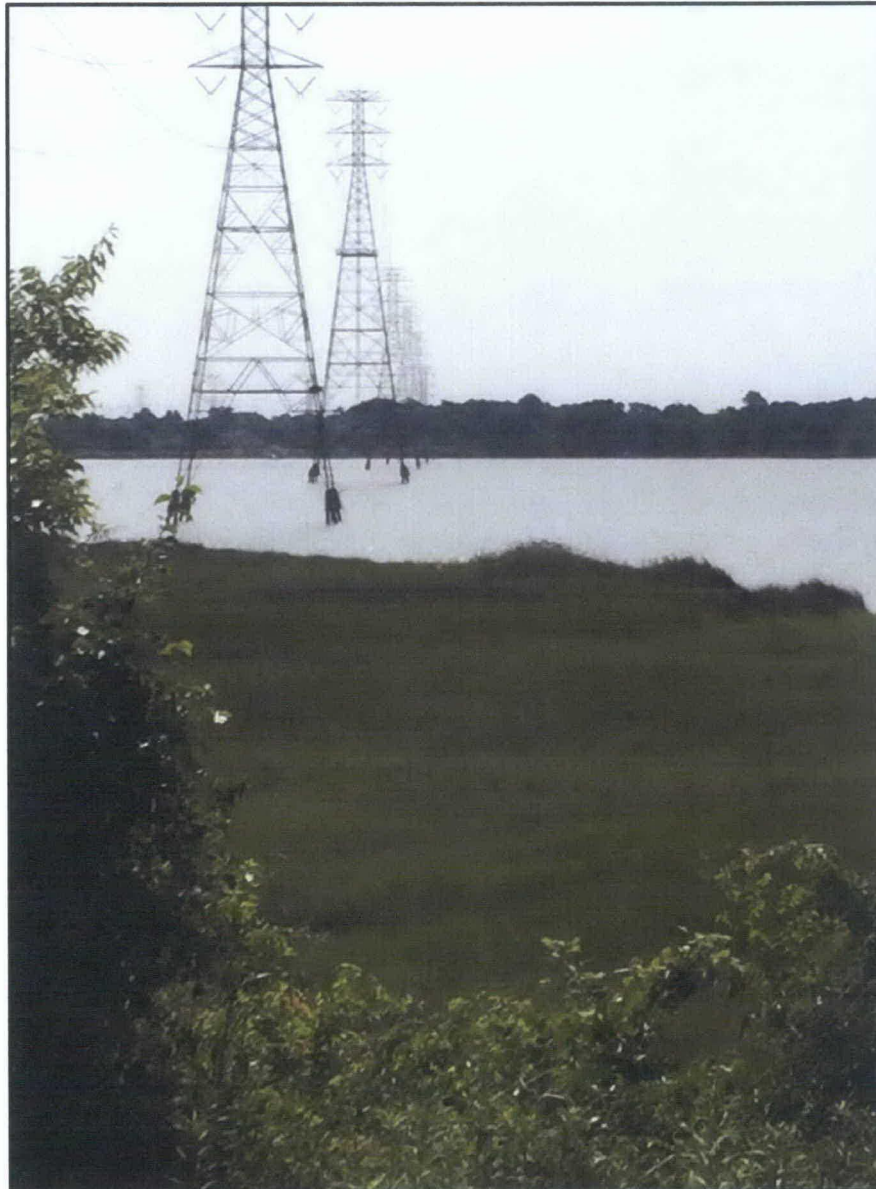
### **3.2.3 Archaeological Sites within the ROW Corridor**

No previously identified archaeological resources are located within the project ROW corridor or proposed access road. A single site, 44SK0172, is located approximately 95 feet to the north of the corridor on the eastern land-based section; however it is located within subdivision and appears to have been destroyed. In addition, the site is not located in the vicinity of any planned construction activities. Although there are no previously recorded archaeological resources within the project ROW, ***it is recommended that an underwater archaeological survey be performed in the vicinity of the proposed new structure foundations. In addition archaeological survey is recommended for the two new terrestrial tower locations and any proposed new access road corridors or areas of ground disturbing activity.***



**Figure 10. View of the Existing Nansemond River 230 kV Transmission Line Crossing from within the River and the Captain John Smith Chesapeake National Historic Trail. View to the Northwest (Photo Location 4).**





**Figure 11. View of The transmission Line Crossing the River and the Captain John Smith Chesapeake National Historic Trail from the Eastern Bank of the Nansemond River to the West (Photo Location 3).**

## **4.0 CONCLUSIONS**

### **4.1 OVERVIEW**

Stantec Consulting Services Inc. (Stantec) was retained by Dominion Virginia Power (Dominion) to conduct a Stage I Pre-Application Analysis for the proposed Nansemond River Crossing Rebuild project in Suffolk. This analysis was completed in October 2015. Stantec conducted preliminary background research and a field study pursuant to the *Guidelines for Assessing Impacts of Proposed Electric Transmission Lines and Associated Facilities on Historic Resources in the Commonwealth of Virginia* (VDHR 2008) for proposed transmission line improvements.

Dominion Virginia Power (Dominion) is proposing to rebuild an existing 230 kV overhead transmission line (Line 223/226) crossing of the Nansemond River approximately one mile upstream of the Route 17/ Mills E. Godwin Bridge in Suffolk, Virginia. The crossing consists of five towers within the River and stretches approximately 1.3 miles between the Hobson and Bennett's Creek Landing areas of Suffolk. The western terminus of the project area can be reached by way of Route 628/Crittenden Road and the eastern terminus can be reached via Route 17/ Bridge Road.

As detailed by VDHR guidance, consideration was given to: NHL properties located within a 1.5-mile radius of the project centerline; NRHP-listed properties, battlefields, and historic landscapes located within a 1.0-mile radius of the project centerline; NRHP-eligible sites located within a 0.5-mile radius of the project centerline; and archaeological sites located within the project ROW corridor. One previously identified architectural and no previously recorded archaeological resources were identified that matched the criteria for consideration detailed in VDHR's guidelines. In addition, consideration was given to the presence of the Captain John Smith Chesapeake National Historic Trail. Since the study was completed prior to filing an SCC application, all digital images were taken from public right-of-way and/or Dominion Virginia Power property.

### **4.2 RECOMMENDATIONS**

#### **4.2.1 Architectural Resources**

The Nansemond River Crossing Rebuild would require the construction of five new towers across the Nansemond River and a single new tower on each terrestrial landing. Once the new towers were in place the existing towers will be dismantled and removed. The existing towers and associated hardware were originally constructed in 1968 and are proposed to be replaced as they are approaching the end of their design life and have experienced significant degradation due to their location in a tidal, saltwater environment. The new towers will be the same height as the existing towers (188-243 feet); however, there will be an overall height increase of 5 – 10 feet for each tower due to taller foundations. Taller foundations are required for the new towers to account for a rise in sea level and increase in storm surge.

There are 23 previously identified architectural resources located within a 1.5-mile radius of the project centerline for this project. No NHL-listed architectural resources are located within the 1.5-mile buffer, and no NRHP-listed resources, Battlefields or Historic Landscapes were identified



within the 1.0-mile buffer. A single eligible resource is located within the 0.5-mile buffer and is the Town Point Farm (VDHR #133-0242). Town Point Farm is located approximately 0.25-miles from the proposed corridor. **Because the proposed rebuild is consistent with the transmission line which is currently in place, it is recommended that the rebuild would have a minimal visual effect to Town Point Farm (VDHR #133-0242).**

In addition to the resources identified within the VDHR'S VCRIS system, research indicated that a portion of the Captain John Smith Chesapeake National Historic Water Trail is located within the APE for this project. While not a traditionally documented historic resource, the trail has been identified recently as a potential historic resource and is therefore noted here and considered as part of this assessment. **Because the proposed rebuild is consistent with the transmission line which is currently in place, it is recommended that the rebuild would have a minimal visual effect to the Captain John Smith Chesapeake National Historic Trail. It is anticipated that the project would have a minimal direct effect to the Captain John Smith Chesapeake National Historic Trail.**

Previously Recorded Architectural Resources Considered within the Stage I Pre-Application Process				
VDHR #	Resource Name	VDHR/NRHP Status	Distance to Line (feet)	Impact
133-0242	Town Point Farm, 2725 Bridge Road	Determined Eligible for Listing on the NRHP by VDHR 2001	1320	Minimal
N/A	Captain John Smith Chesapeake National Historic Trail	N/A	0.0	Minimal

#### 4.2.1 Archaeological Resources

No previously identified archaeological resources are located either within or immediately adjacent to the project ROW corridor or proposed access roads; however, **it is recommended that an underwater archaeological survey should be performed as well as an archaeological survey of the two terrestrial new tower locations and any proposed access road not on existing roadway to cover all areas that will be directly impacted by construction.**

## 5.0 REFERENCES

Advisory Council for Historic Preservation (ACHP)

2000 36 CFR 800:Part 800- *Protection of Historic and Cultural Properties*. Federal Register, September 2, Washington, D.C.

United States Department of the Interior (Interagency Resources Division)

1981 *Department of the Interior's Regulations, 36 CFR Part 60: National Register of Historic Places*. Interagency Resources Division, National Park Service, U.S. Department of the Interior, Washington, D.C.

1983 *Department of the Interior, Archaeology and Historic Preservation: Secretary of the Interior's Standard's and Guidelines*. Interagency Resources Division, National Park Service, U.S. Department of the Interior, Washington, D.C.

1991 *How to Apply the National Register Criteria of Evaluation. National Register Bulletin 15*. Interagency Resources Division, National Park Service, U.S. Department of the Interior, Washington, D.C.

Virginia Department of Historic Resources (VDHR)

1997 *Historic Context Guidelines for Preparing Cultural Resource Survey Reports*. VDHR, Richmond.

2008 *Guidelines for Assessing Impacts of Proposed Electric Transmission Lines and Associated Facilities on Historic Resources in the Commonwealth of Virginia*. VDHR, Richmond.

2011 *Guidelines for Historic Resource Survey in Virginia*. VDHR, Richmond.

2015 Archives Files.

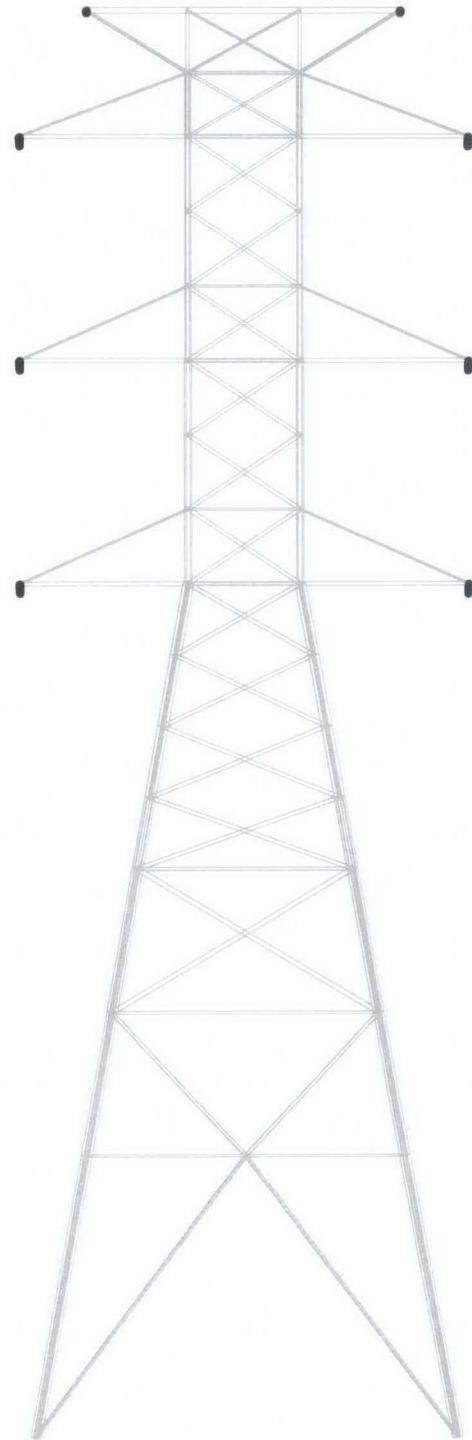
## **Appendix A**

### **A.1      *STRUCTURE DETAILS and OVERVIEW MAPS – NANSEMOND RIVER CROSSING REBUILD PROJECT***

PROPOSED 223/188

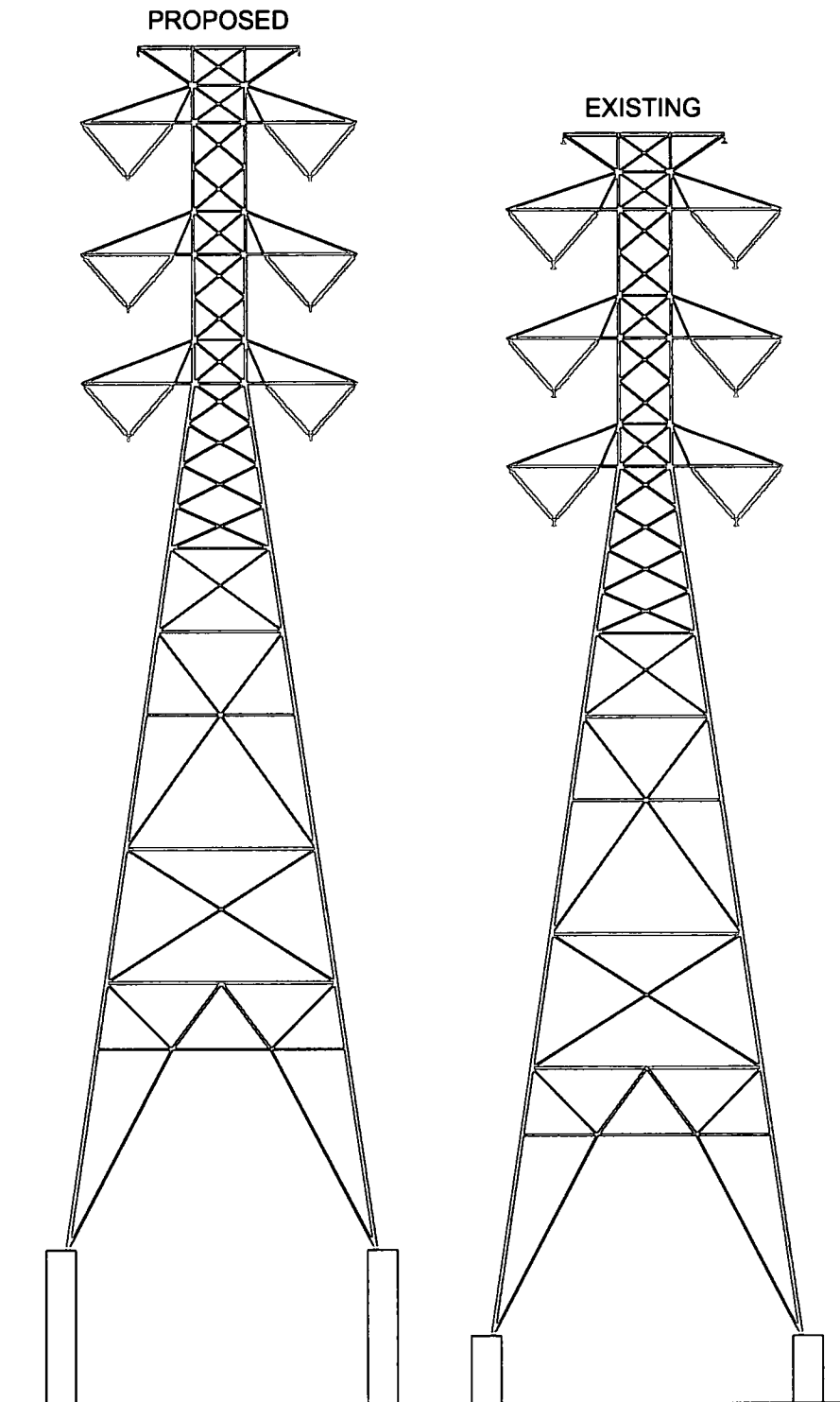


EXISTING 223/188



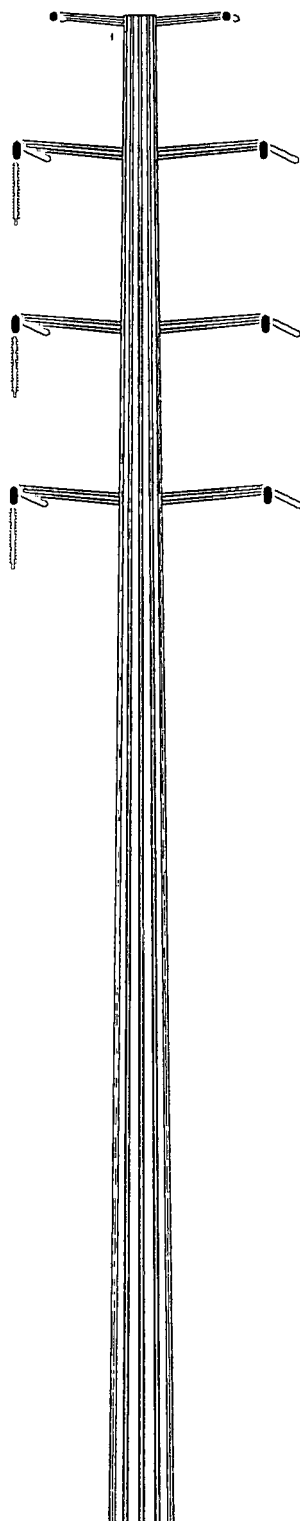
PROPOSED CONFIGURATION

TYPICAL RIGHT OF WAY LOOKING WEST

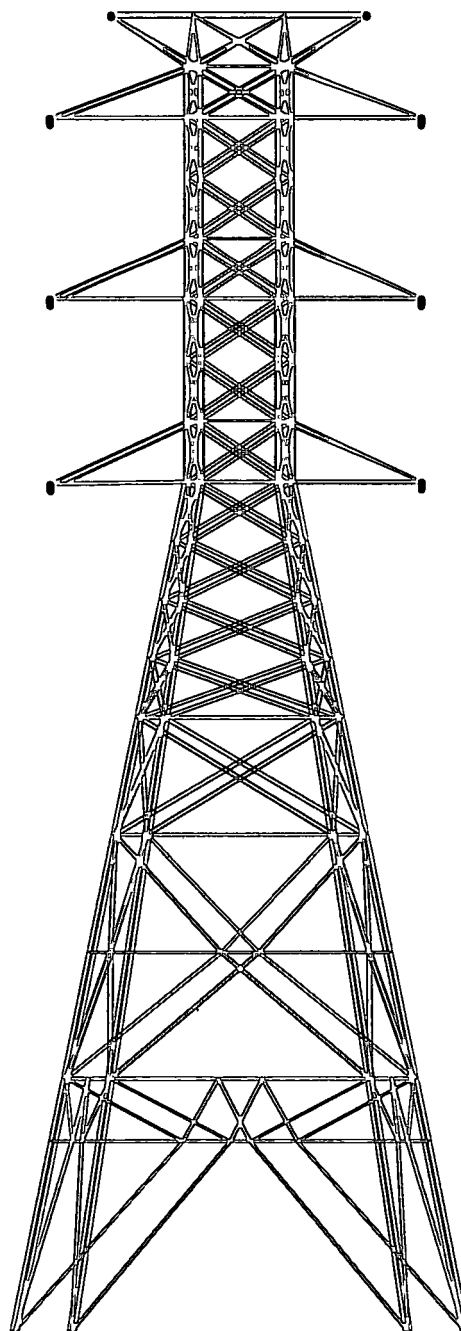


PROPOSED CONFIGURATION  
TYPICAL RIGHT OF WAY LOOKING WEST

223/182



EX 182



PROPOSED CONFIGURATION

TYPICAL RIGHT OF WAY LOOKING WEST









**Stantec**

Project Location: City of Suffolk, Virginia

Client/Project: Dominion Virginia Power  
Nansemond River Crossing Rebuild

Figure No: 1

Submitted: 2015-09-10

2-Foot Contours

- Existing Tower to Remain
- Tower Type D2RCT (6 Pile Foundation)
- Tower to be Replaced with Monopole
- Tower Type N1 (5 Pile Foundation)
- Special Flood Hazard Area-100 Year Floodplain

**Legend**

- Approximate Palustrine Emergent Wetland Limits
- Approximate Tidal Emergent Wetland Limits
- Approximate Tidal Water Limits
- Project Limits
- Parcel Boundary
- Private Owner Lease

**Notes**

- Coordinate System: NAD 1983 StatePlane Virginia South FIPS 4602 Feet
- Base features provided by Dominion Virginia Power
- Orthomosaic © National Geographic and Bing Maps
- The approximate limits of the wetlands and other waters of the U.S. shown on this map are for informational purposes only and are not to be used for regulatory purposes.
- Order Lease data provided by VMRC August 2015.
- National Flood Hazard Layer data provided by FEMA August 2015.
- Microsoft product screen shot(s) reprinted with permission from Microsoft Corporation

Scale: 1/6,000 (A) original document size of 11x17

0 500 1,000 feet

**Stantec**

203400227

Prepared by AGS on 2015-08-14

Reviewed by AGS on 2015-08-14

Independent Review by AGS on 2015-08-20

**Map of Virginia**

Location of project area in Virginia

**Jurisdictional Area Impacts Map**

Page 03 of 03

## **Appendix B**

### **B.1      *MAP OF THE CAPTAIN JOHN SMITH CHESAPEAKE NATIONAL HISTORIC TRAIL WITHIN THE PROJECT AREA***



Figure 2.7f:  
**High Potential Historic Sites, High  
Potential Route Segments, and  
Other Trail Related Resources<sup>1,2</sup>**  
Lower Bay (5 of 5)

**High Potential Historic Sites**

- Significant Voyage Stops within a Setting that is Highly Evocative of the 17th Century
- ▲ Significant 17th Century American Indian Archeological Sites (including sites listed on or determined eligible for the National Register of Historic Places)
- ✱ Indigenous Cultural Landscapes or Sites that are Culturally Significant to Modern Chesapeake Bay Tribes (to be determined)
- Sites along the Voyage Routes that are Highly Evocative of the 17th Century

**High Potential Route Segments**

- Rappahannock River
- James River

**Other Trail-Related Resources**

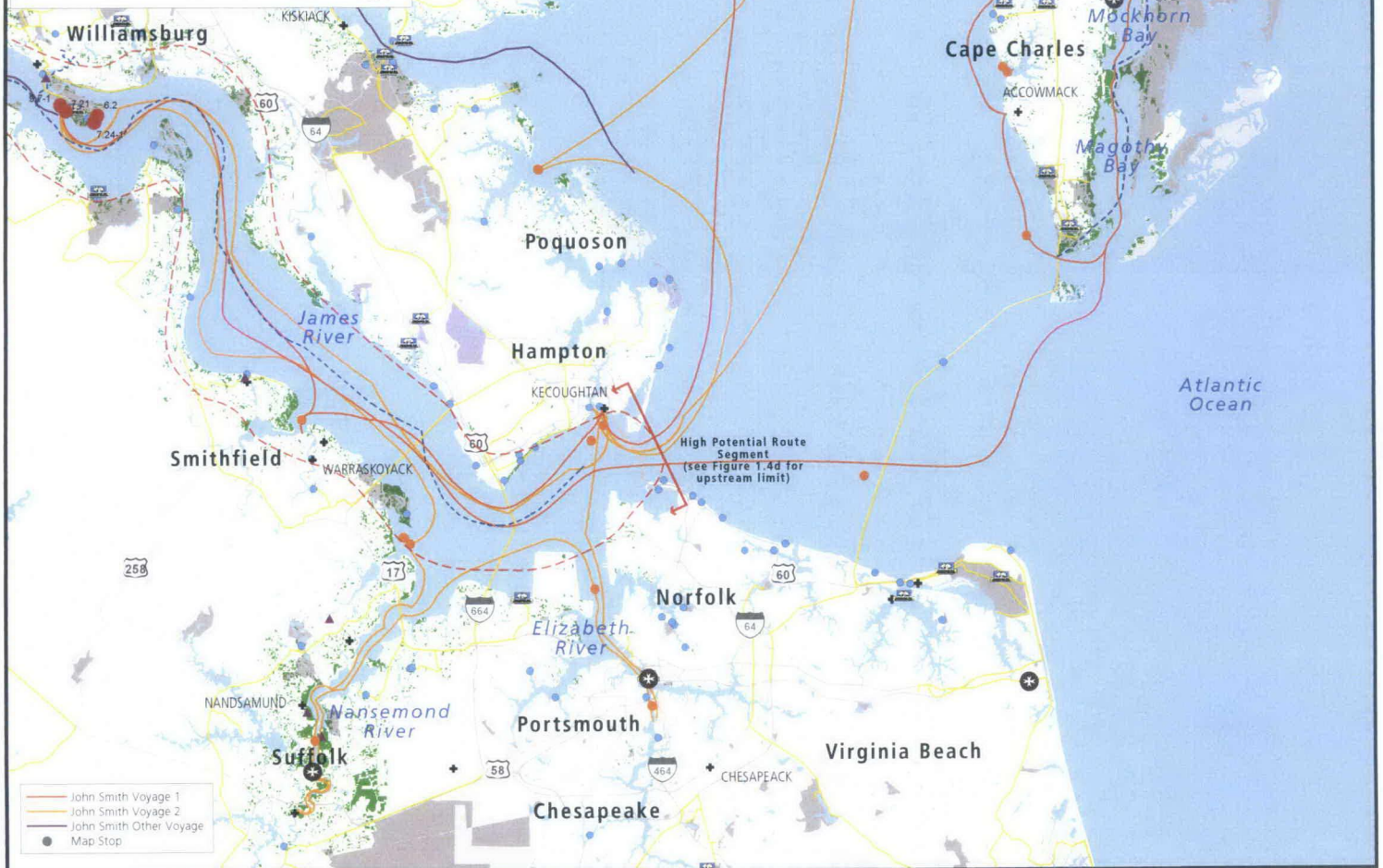
- Other Voyage Stops (including all other voyage stops that do not meet criteria for designation as a high potential historic site)
- ✱ Cross Sites (general locations in close proximity to the trail where Smith's maps indicate that he or his crew set a brass cross marking the upriver limit of their voyage route)
- Historic American Indian Town Sites
- Visible Shoreline Generally Evocative of the 17th Century
- Existing Public Access Sites
- Designated Water Trails (including water trails managed by a trail partner who provides water trail mapping and marking, and ideally some interpretive media/programming and trail facilities)
- Scenic Byways, Auto Routes, and Land Trails
- Protected Lands that are Open to the Public (including federal, state, local lands, and private lands, exclusive of military lands and wildlife refuges that are closed to the public)
- Protected Lands that are Closed to the Public (generally including private land protected by conservation easements)
- Chesapeake Bay Gateways and Watertrails Network Partner

See Section 2.4 of the CMP text for criteria used for designation.

In the future, further research and/or changing resource conditions along the trail could support decisions by the NPS to add or delete one or more high potential historic sites.

As part of the CMP planning process, the NPS has applied high potential historic site criteria to eight segments of the trail. Further site-specific analyses of the remainder of the voyage routes are needed to identify additional high potential historic sites that meet designation criteria.

National Park Service  
U.S. Department of the Interior





# COMMONWEALTH of VIRGINIA

Molly Joseph Ward  
Secretary of Natural Resources

**Department of Historic Resources**  
2801 Kensington Avenue, Richmond, Virginia 23221

Julie V. Langan  
Director

Tel: (804) 367-2323  
Fax: (804) 367-2391  
www.dhr.virginia.gov

November 13, 2015

Mr. John Derbish  
U.S. Army Corps of Engineers  
Norfolk District  
803 Front Street  
Norfolk, Virginia 23510

RE: *Nansemond River Crossing Transmission Line Rebuild, City of Suffolk, Virginia*  
DHR File No. 2015-3841 (USACE) and 2015-1092 (SCC)

Dear Mr. Derbish:

The Department of Historic Resources (DHR) has received through our ePIX system the Nansemond River Crossing project (NAO-2015-02840) for our review and comment. We have also received for review the report, *Stage I Pre-Application Analysis for the Proposed Nansemond River Crossing Rebuild, Suffolk, Virginia*, prepared by Stantec, Inc. (Stantec) for Dominion Virginia Power (Dominion) in accordance with Section I of DHR's *Guidelines for Assessing Impacts of Proposed Electric Transmission Lines and Associated Facilities on Historic Resources in the Commonwealth of Virginia* (2008). In addition to reviewing this project under the Federal Section 106 process for the U.S. Army Corps of Engineers (Corps), DHR is reviewing this project under the State Corporation Commission (SCC) process. Our comments under the state and Federal review processes are presented separately below.

## **SCC Process**

Regarding the state review, Dominion's pre-application analysis considers the potential impact of the proposed project on recorded archaeological sites and on known historic architectural properties listed or previously determined eligible for listing in the Virginia Landmarks Register (VLR) and the National Register of Historic Places (NRHP) within a tiered study area. DHR's comments on the pre-application analysis are provided below and utilize the following scale in describing impacts:

- **None** – Project is not visible from the property
- **Minimal** – Occur within viewsheds that have existing transmission lines, locations where there will only be a minor change in tower height, and/or views that have been partially obstructed by intervening topography and vegetation.
- **Moderate** – Include viewsheds with expansive views of the transmission line, more dramatic changes in the line and tower height, and/or an overall increase in the visibility of the route from the historic properties.

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- **Severe** – Occur within viewsheds that do not have existing transmission lines and where the views are primarily unobstructed, locations where there will be a dramatic increase in tower visibility due to the close proximity of the route to historic properties, and viewsheds where the visual introduction of the transmission line is a significant change in the setting of the historic properties.

To summarize, the pre-application analysis identified one (1) VLR/NRHP-eligible resource within the tiered study area. The Captain John Smith Chesapeake National Historic Trail (CAJO) is also identified as a potential historic resource within the study area. Based upon a review of the information provided, we are unable to concur with the recommendations in the pre-application analysis that the proposed project will have minimal impacts to Town Point Farm (DHR ID #133-0242) and CAJO. The *Guidelines* recommend photo-simulations for new towers that will increase in height by >10% or 20 ft. Despite six of the proposed towers being less than a 10-foot increase in height, one (1) tower (223/182) on the eastern bank of the land based portion of the project will be 20 feet taller than the existing tower; therefore a photo-simulation is recommended in order to assess impacts.

Impacts to unrecorded and/or unevaluated archaeological and historic architectural resources remain unassessed. In accordance with Section II of the above-referenced *Guidelines* and to fully identify and address impacts to historic resources, we recommend the following:

1. Comprehensive archaeological and architectural surveys in accordance with DHR guidelines by qualified professionals prior to construction of any SCC-approved alternative.
2. Evaluation of all identified resources for listing in the VLR/NRHP.
3. Assessment of potential direct and indirect impacts to all VLR/NRHP-eligible/listed resources, including Town Point Farm and CAJO.
4. Avoidance, minimization, and/or mitigation of moderate to severe impacts to VLR/NRHP-eligible/listed resources by Dominion in consultation with DHR and other stakeholders.

### **Federal Section 106 Process**

It is our understanding that the Area of Potential Effects (APE), as defined by the Corps, consists of the footprints of the five proposed towers within the Nansemond River and the area of indirect (visual) effects of the towers. Based on the information provided, we do not concur with the Corps' APE determination. According to the Joint Permit Application and pre-application analysis prepared by Stantec, the project involves the replacement of seven towers: five towers within the Nansemond River and the first terrestrial tower on each side of the river. Implementation of the project will also require the construction of roads to access the transmission line right-of-way. We request that the Corps expand the APE to include the first terrestrial tower on each side of the river and the access roads.

To date, the Corps has not made an effect determination, and DHR is unable to make any recommendations regarding effects to historic properties without additional information. To aid in the identification of historic properties that may be impacted by this project, we support the recommendations for archaeological surveys made by Stantec in the pre-application analysis. Specifically, DHR recommends an underwater archaeological survey of the proposed tower locations within the Nansemond River and a terrestrial archaeological survey of the two proposed terrestrial towers and any new access roads.

As noted above, we are unable to concur with the consultant's recommendations that the proposed project will have minimal impacts (i.e., no adverse effect) on Town Point Farm and CAJO. In addition to archaeological surveys of all areas of ground disturbance, including subaqueous river bottom, DHR

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Page 3

DHR File No. 2015-3841 &amp; 2015-1092

November 13, 2015

recommends a Reconnaissance (Phase I) architectural survey of all structures greater than 50 years of age within 0.5 miles of the right-of-way. A complete Virginia Cultural Resource Information System (VCRIS) Survey Form and supporting materials should be completed for each recorded architectural property and submitted to DHR for our review and comment. The architectural study should also include viewshed assessments for all VLR/NRHP-eligible/listed resources, including Town Point Farm.

The archaeological and architectural surveys must be conducted by a qualified professional in accordance with the *Archeology and Historic Preservation: Secretary of the Interior's Standards and Guidelines* (48 FR 44716-42) and DHR's *Guidelines for Conducting Historic Resources Survey in Virginia* (October 2011). Two archival hardcopies and one digital copy of any resulting reports should be submitted to our office for review and approval prior to any ground disturbance. After reviewing the results of the survey, we would be able to advise you whether any further investigations and/or mitigative actions are warranted.

If you have any questions concerning our review and comments on architecture, please contact Andrea Burke at [andrea.burke@dhr.virginia.gov](mailto:andrea.burke@dhr.virginia.gov). If you have any other questions at this time, please do not hesitate to contact me at (804) 482-6103 or [gregory.labudde@dhr.virginia.gov](mailto:gregory.labudde@dhr.virginia.gov).

Sincerely,



Greg LaBudde, Archaeologist  
Review and Compliance Division

c. Nadiah Younus, Dominion  
Ellen Brady, Stantec

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# COMMONWEALTH of VIRGINIA

Randall P. Burdette  
Executive Director

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December 22, 2015

Ms. Jennifer Johnson, Regulatory Specialist  
Stantec Consulting Services Inc.  
5209 Center Street  
Williamsburg, Virginia 23188

RE: Proposed Nansemond River 230kV Transmission Line Rebuild

Dear Ms. Johnson:

The Department has received your December 15, 2015 letter requesting advance comments as they pertain to the proposed Nansemond River 230kV Transmission Line Rebuild. Following our review of the information package you provided, it appears as though the proposed placement will not result in any portion of the project being located within 20,000 linear feet of a public use airport. Therefore, the project sponsor will only need to submit a 7460 form to the Federal Aviation Administration for any structure or portion of transmission line that reaches 200 feet above ground level (AGL) or higher. Please note that the submission of a 7460 form prompts the FAA to initiate an airspace study. The Airspace study will determine if the proposed development will create a hazard to air navigation.

If you have any questions regarding this matter, please contact me at (804) 236-3638.

Sincerely,

  
S. Scott Denny  
Senior Aviation Planner  
Virginia Department of Aviation

